



GOVERNOR  
BRIAN SCHWEITZER  
  
STATE OF MONTANA

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## Governor's Executive Budget Fiscal Years 2012 – 2013

### Renewable Resource Grant and Loan Program

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Department of Natural Resources  
and Conservation

Conservation and Resource  
Development Division



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# Renewable Resource Grant and Loan Program

Project Evaluations and Funding Recommendations  
For the 2013 Biennium

and

2011 Biennium Status Report

Prepared by the

Montana  
Department of Natural Resources  
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Conservation and Resource Development Division  
Resource Development Bureau

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## CONTENTS

Contents .....	i
List of Abbreviations .....	iv
Alphabetical Index of Projects .....	vii
Introduction .....	xv

## CHAPTER I

<b>The Renewable Resource Grant and Loan Program .....</b>	<b>1</b>
Background .....	1
Purpose .....	1
Project & Applicant Eligibility .....	1
Private Entities.....	2
Irrigation Development Program .....	2
Emergency Grants.....	2
Planning Grants.....	2
Funding Limitations .....	3
Funding Authority .....	3
Program Implementation .....	3
Rule-Making Authority .....	4
Program Goals .....	4

## CHAPTER II

<b>Renewable Resource Grants to Public Entities .....</b>	<b>5</b>
Application Administration and Project Review Procedures .....	5
Project Solicitation .....	5
Application Review .....	5
Project Ranking Criteria.....	8
Funding Recommendations .....	10
Project Management .....	10
Project Monitoring.....	10
Project Evaluation.....	11

## CHAPTER III

<b>Coal Severance Tax Loans to Public Entities .....</b>	<b>227</b>
Application Administration and Project Review Procedures .....	227
Project Solicitation .....	227
Application Review .....	227
Funding Recommendations .....	227
Availability of Loan Funds .....	227
Loan Repayment .....	228
Interest Rates .....	228
Project Management .....	229
Project Monitoring.....	230

## CHAPTER IV

<b>Renewable Resource Grants and Loans to Private Entities .....</b>	<b>233</b>
Grant Application Administration and Project Review Procedures .....	233
Grant Project Solicitation .....	233
Grant Application Review .....	233
Grant Funding Recommendations .....	234
Grant Project Management .....	234
Grant Project Monitoring.....	234
Grant Project Evaluation.....	234
Private Loan Application and Project Review Procedures .....	235
Loan Project Solicitation .....	235
Loan Application Review .....	235
Loan Funding Recommendations .....	235
Availability of Loan Funds .....	235
Interest Rates .....	235
Loan Project Management .....	236
Loan Project Monitoring.....	236
Loan Project Evaluation.....	237
Private Loan Projects Previously Funded .....	237

## CHAPTER V

<b>Irrigation Development Grants.....</b>	<b>239</b>
Background .....	239
Project Solicitation and Review .....	239

## CHAPTER VI

<b>Emergency Grants and Loans .....</b>	<b>241</b>
Application Administration and Project Review Procedures .....	241
Project Solicitation .....	241
Application Review .....	241
Funding Recommendations .....	241
Project Management .....	242
Emergency Grant and Loan Applications in the 2009 Biennium .....	242
Authorized Emergency Grant Projects .....	242

## CHAPTER VII

<b>Summary of Grants to Public Entities, October 2008-September 2010 .....</b>	<b>243</b>
Grant Projects Completed since October 1, 2008.....	243
Active Grant Projects.....	252
Authorized Grant Projects Not Yet Executed .....	270
Terminated Projects .....	271

## CHAPTER VIII

<b>Renewable Resource Project Planning Grants .....</b>	<b>273</b>
Application Administration and Project Review Procedures .....	273
Project Solicitation .....	273
Application Review .....	273
Project Management .....	273
Authorized Projects .....	274

### List of Figures

1 Flowchart of Grant Application Review and Ranking Process .....	7
2 2010 Grant Applications by Order of Ranking Recommendation .....	13
3 Requested Funding by Project Type .....	19
4 Coal Severance Tax Loans / Resource Development Public Loan Balances.....	231
5 Coal Severance Tax Loans / Water Development Public Loan Balances.....	232
6 Public Loans Authorized in 2009 and Seeking Reauthorization .....	232
7 Private Grant Applications Approved During 2009-2010.....	234
8 Private Loan Applications Approved During 2009-2010.....	237
9 Irrigation Development Grants Awarded in FY 2010.....	240
10 Project Planning Grants Approved During the 2011 Biennium.....	274

## LIST OF ABBREVIATIONS

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ADLC .....	Anaconda-Deer Lodge County
ALCO .....	Aquatic Lands Conservation Ordinance
AOC .....	Order on Consent
ARRA .....	American Reinvestment and Recovery Act
AWEP .....	Agricultural Water Enhancement Program
BHR .....	Big Hole River
BIA .....	Bureau of Indian Affairs
BRID .....	Bitter Root Irrigation District
BRIP .....	Buffalo Rapids Irrigation Project District 1
BTC .....	Big Timber Creek
BWC .....	Beaverhead Watershed Committee
CARDD .....	Conservation and Resource Development Division, DNRC
CD .....	Conservation District
CDBG .....	Community Development Block Grant
cfs .....	cubic feet per second
CID .....	Clinton Irrigation District
CIP .....	Capital Improvements Plan
CMP .....	corrugated metal
CSKT .....	Confederated Salish and Kootenai Tribes
DBWUA .....	Deadman's Basin Water Usage Association
DDID .....	Daly Ditches Irrigation District
DEQ .....	Montana Department of Environmental Quality
DOC .....	Montana Department of Commerce
DOE .....	U.S. Department of Energy
DOI .....	U.S. Department of Interior
DNRC .....	Montana Department of Natural Resources and Conservation
DOC .....	Montana Department of Commerce
DOT .....	Montana Department of Transportation
EA .....	Environmental Assessment
EBID .....	East Bench Irrigation District
EDU .....	Equivalent Dwelling Unit
EECBG .....	Energy Efficiency Conservation Block Grant
EPA .....	U.S. Environmental Protection Agency
ESA .....	Endangered Species Act
EQIP .....	Environmental Quality Incentive Program
FBIP .....	Fort Belknap Irrigation Project
FCWP .....	Flint Creek Water Project
FCWUA .....	Flint Creek Water Project
FEMA .....	Federal Emergency Management Agency
FERC .....	Federal Energy Regulatory Commission
FIIP .....	Flathead Indian Irrigation Project
FJBC .....	Flathead Joint Board of Control
FPIP .....	Fort Peck Irrigation Project
FPWUA .....	Fort Peck Water Users Association
FSID .....	Fort Shaw Irrigation District
FWP .....	Montana Fish, Wildlife and Parks
FY .....	Fiscal Year
GID .....	Greenfields Irrigation District
GIS .....	Geographic Information System
GMCD .....	Green Mountain Conservation District
gpd .....	gallons per day
gpm .....	gallons per minute
HDPE .....	high-density polyethylene

HPID .....	Huntley Project Irrigation District
HRT .....	hydraulic retention time
HUC .....	hydrologic unit codes
HUD .....	U.S. Department of Housing and Urban Development
HVID .....	Helena Valley Irrigation District
IUP .....	intended use plan
kWh .....	kilowatt-hours
LID .....	Lockwood Irrigation District
LiDAR .....	light detection and ranging
LMCD .....	Lower Musselshell Conservation District
MAFB .....	Malmstrom Air Force Base
MBMG .....	Montana Bureau of Mines and Geology
MBR .....	membrane bio reactor
MCA .....	Montana Code Annotated
MID .....	Malta Irrigation District
mg/l .....	milligrams per liter
MMWG .....	Mosby Musselshell Watershed Group
MOU .....	memorandum of understanding
MPDES .....	Montana Pollutant Discharge Elimination System
MWC .....	Musselshell Watershed Coalition
NCMRWA .....	North Central Montana Regional Water Authority
MRWS .....	Montana Rural Water System, Inc.
NEPA .....	National Environmental Policy Act
NHPA .....	National Historic Preservation Act
NRCS .....	Natural Resources Conservation Service, U.S. Department of Agriculture
NRDP .....	Natural Resource Damage Program, Department of Justice
NRIS .....	Natural Resource Information System
NWI .....	National Wetlands Inventory
O&M .....	operation and maintenance
PBPCD .....	Park Bench-Paradise Canal District
PCCRC .....	Pondera County Canal and Reservoir Company
PER .....	preliminary engineering report
POM .....	patch occupancy modeling system
PVC .....	polyvinyl chloride
PVCI .....	Pleasant Valley Canal, Inc.
RC&D .....	Resource Conservation and Development
RCEH .....	Ravalli County Environmental Health
RD .....	Rural Development
RDB .....	Resource Development Bureau
RDGP .....	Reclamation and Development Grants Program
RFP .....	request for proposal
RIT .....	Resource Indemnity Trust
RRGL .....	Renewable Resource Grant and Loan Program
RSID .....	Rural Special Improvement District
SCADA .....	supervisory control and data acquisition
SCWG .....	Swamp Creek Watershed Group
SGCCD .....	Sweet Grass County Conservation District
SMCWEP .....	South Meadow Creek Water Efficiency Project
SRF .....	State Revolving Fund
SRWG .....	Sun River Watershed Group
SSRA .....	State Special Revenue Accounts
STAG .....	State and Tribal Assistance Grant
SWPB .....	State Water Projects Bureau
TAC .....	Technical Advisory Committee
TCCC .....	Teton Cooperative Canal Company



TIGER.....	Transportation Investment Generating Economic Recovery
TLMD.....	Trust Land Management Division
TMDL.....	Total Maximum Daily Loads
TSEP.....	Treasure State Endowment Program
TU.....	Trout Unlimited
ULRRWSD.....	Upper Lower River Road Water and Sewer District
UM.....	University of Montana
UMWUA.....	Upper Musselshell Water Users Association
USACE.....	U.S. Army Corps of Engineers
USBR.....	U.S. Bureau of Reclamation, U.S. Department of the Interior
USDA.....	U.S. Department of Agriculture
USFS.....	U.S. Forest Service, U.S. Department of Agriculture
USGS.....	U.S. Geological Survey
USFWS.....	U.S. Fish and Wildlife Service, P) Department of the Interior
UV.....	ultraviolet
VCP.....	vittrified clay pipe
VFD.....	variable frequency drive
VOC.....	volatile organic compound
WRD.....	Water Resources Division
WRDA.....	Water Resources Development Act, U.S. Department of Agriculture
WSD.....	Water and Sewer District
WTP.....	water treatment plant
WUA.....	water users association
WWTP.....	wastewater treatment plant

## ALPHABETICAL INDEX OF PROJECTS

Applications for Funding During the 2013 Biennium

This table provides an alphabetical list (by applicant) of the 112 grant and loan proposals submitted in 2010 that have requested funds during the 2013 biennium. Page numbers correspond to the project evaluation contained in this report.

<b>Amsterdam-Churchill County Sewer District No. 307</b>	
Wastewater System Improvements .....	50
<b>Anaconda - Deer Lodge County</b>	
Systemwide Metering .....	99
<b>Augusta Water and Sewer District</b>	
Wastewater System Improvements.....	195
<b>Beaverhead Conservation District</b>	
Poindexter Slough Fishery Enhancement.....	34
<b>Belt, Town of</b>	
Water System Improvements .....	56
<b>Bigfork County Water and Sewer District</b>	
Water Supply and Transmission Main Improvements.....	213
<b>Bitterroot Irrigation District</b>	
Siphon 1 Improvement, Phase 2 .....	106
<b>Bozeman High School District No. 7</b>	
Mandeville Creek Restoration and Community Education.....	153
<b>Brady County Water and Sewer District</b>	
Water System Improvements .....	188
<b>Buffalo Rapids Irrigation Project District 1</b>	
Lateral 26.4 Conversion .....	38
<b>Butte-Silver Bow Consolidated City-County Government</b>	
Big Hole River Pump Station Rehabilitation.....	170
<b>Carbon Conservation District</b>	
Pleasant Valley Canal Rehabilitation .....	199
<b>Carbon County Conservation District</b>	
Whitehorse Canal Company – River Bank Stabilization .....	160
<b>Cascade County Conservation District</b>	
Whitmore Ravine Erosion Control and Storm Drainage, Phase 1 .....	223
<b>Chippewa Cree Tribe</b>	
Dry Fork Farms Irrigation Enhancement.....	79
<b>Clinton Irrigation District</b>	
Schoolhouse Lateral Pipeline Conversion.....	68

<b>Confederated Salish and Kootenai Tribes</b>	
Jocko Upper S Canal Lining .....	74
<b>Crow Tribe of Indians</b>	
Crow Agency Water System Improvements, Phase 4A.....	118
<b>Culbertson, Town of</b>	
Wastewater System Improvements.....	31
<b>Cut Bank, City of</b>	
Water System Improvements, Phase 4.....	150
<b>Daly Ditches Irrigation District</b>	
Hedge Canal Improvement .....	90
<b>Deer Lodge, City of</b>	
Wastewater System Improvements.....	25
<b>East Bench Irrigation District</b>	
Main Canal Check Structure Rehabilitation .....	69
<b>East Helena, City of</b>	
Wastewater System Improvements.....	136
<b>Em-Kayan County Water and Sewer District</b>	
Water System Improvements .....	183
<b>Eureka, Town of</b>	
Wastewater System Upgrade and Expansion.....	207
<b>Fairfield, Town of</b>	
Water System Improvements .....	101
<b>Fergus Conservation District</b>	
Big Spring Creek Stream Restoration at the Machler Conservation Easement.....	27
<b>Flathead County</b>	
Bigfork Stormwater System Improvements.....	42
<b>Flathead Joint Board of Control</b>	
Jocko Upper J Canal Diversion Structure .....	81
<b>Fort Belknap Indian Community</b>	
Fort Belknap Indian Community Water Conservation .....	60
<b>Fort Peck Tribes</b>	
Lateral L-2M Rehabilitation .....	103
<b>Fort Shaw Irrigation District</b>	
Water Quality and Quantity Improvement.....	86
<b>Foys Lakeside County Water and Sewer District</b>	
Water System Improvements .....	146



<b>Fromberg, Town of</b>	
Water System Improvements .....	164
<b>Gallatin County Solid Waste District</b>	
Logan Landfill Waste-to-Energy Feasibility Study.....	185
<b>Gallatin Gateway County Water and Sewer District</b>	
Wastewater System Improvements.....	92
<b>Glendive, City of</b>	
Glendive Floodplain Feasibility Study .....	85
<b>Green Mountain Conservation District</b>	
Tuscor Creek Restoration.....	114
<b>Greenfields Irrigation District</b>	
Big Coulee Wastewater and Water Quality .....	94
<b>Hardin, City of</b>	
Water System Improvements .....	104
<b>Harlem, City of</b>	
Wastewater System Improvements.....	46
<b>Hebgen Lake Estates County Water and Sewer District</b>	
Wastewater System Improvements.....	44
<b>Helena Valley Irrigation District</b>	
Pump No. 2 Rehabilitation.....	55
<b>Hill County Conservation District</b>	
Milk River Basin Riparian and Hydrology Restoration .....	187
<b>Hill County Water District</b>	
Water System Improvements .....	120
<b>Huntley Project Irrigation District</b>	
Lower Canal Seepage Lining .....	97
<b>Joliet, Town of</b>	
Water System Improvements .....	209
<b>Jordan, Town of</b>	
Water System Improvements .....	165
<b>Kalispell, City of</b>	
Woodland Park Pond Remediation .....	175
<b>Kevin, Town of</b>	
Water System Improvements, Phase 3.....	124
<b>Lacasa Grande Water and Sewer District</b>	
Wastewater Improvements.....	126

<b>Lewistown, City of</b>	
East Fork Dam Repair .....	116
<b>Libby, City of</b>	
Wastewater Collection System and Treatment Facility Upgrades .....	179
<b>Lincoln Conservation District</b>	
Sinclair Creek Watershed Improvement.....	190
<b>Lockwood Area/Yellowstone County Water and Sewer District</b>	
Lockwood Water Treatment Plant Clearwell Addition .....	205
<b>Lockwood Irrigation District</b>	
Intake Canal Spillway Replacement.....	83
<b>Lockwood Water and Sewer District</b>	
Wastewater Collection System Improvements.....	132
<b>Lower Musselshell Conservation District</b>	
Lower Musselshell Delphia Melstone Irrigation Structure Rehabilitation Lining.....	71
<b>Lower Yellowstone Irrigation Project Board of Control</b>	
Lower Yellowstone On-Farm Water Conservation Measures .....	167
<b>Madison Conservation District</b>	
South Meadow Creek Water Efficiency.....	72
<b>Malta Irrigation District</b>	
Dodson North Canal Siphons Replacement.....	76
<b>Manhattan, Town of</b>	
Water System Improvements .....	171
<b>Melrose Water and Sewer District</b>	
Wastewater System Improvements.....	194
<b>Missoula County Office of Planning Grants</b>	
Missoula County LiDAR Mapping.....	140
<b>Missoula County</b>	
Spring Meadows Sewer.....	138
<b>Montana DNRC - Trust Land Management Division</b>	
Smith Lake Dam Rehabilitation .....	29
<b>Montana DNRC - Water Resources Division</b>	
Clark Fork River Basin Task Force .....	112
<b>Montana DNRC - Water Resources Division</b>	
Cooney and Deadman's Basin Automated Instrumentation .....	157
<b>Montana DNRC - Water Resources Division</b>	
East Fork of Rock Creek Diversion and Fish Screen.....	88

<b>Montana DNRC - Water Resources Division</b>	
Hydropower Feasibility Study.....	21
<b>Montana DNRC - Water Resources Division</b>	
Martinsdale Supply Canal Headworks Rehabilitation .....	142
<b>Montana DNRC - Water Resources Division</b>	
StreamStats Interactive Web Map Application .....	177
<b>Montana DNRC - Water Resources Division</b>	
Water Resource Survey Framework .....	202
<b>Montana Fish, Wildlife and Parks</b>	
Chadbourne Diversion Dam Repair and Selective Fish Passage Retrofits .....	53
<b>North Havre County Water District</b>	
Water System Improvements .....	108
<b>North Powell Conservation District</b>	
Blackfoot Irrigation Efficiency .....	173
<b>Pablo/Lake County Water and Sewer District</b>	
Water System Improvements .....	148
<b>Paradise Valley Irrigation District</b>	
Main Canal Water Measurement.....	224
<b>Park Conservation District</b>	
Livingston Ditch Water Efficiency and Infrastructure Protection .....	159
<b>Park Conservation District</b>	
Park-Branch Paradise Canal Water Efficiency.....	96
<b>Park County</b>	
Shields River Surface and Groundwater Analysis, Planning and Long-Range Policy Formulation .....	214
<b>Petroleum County Conservation District</b>	
Horse Creek Coulee Water Storage.....	217
<b>Polson, City of</b>	
Water System Improvements .....	48
<b>Pondera Conservation District</b>	
C-Canal Rehabilitation.....	36
<b>Pondera County Canal and Reservoir Company</b>	
Wasteway Rehabilitation and Water Quality Improvement.....	40
<b>Ravalli County</b>	
LIDAR Mapping for Flood Hazard Identification, Phase 3.....	130
<b>Ravalli County Environmental Health</b>	
Bitterroot Valley Septic Systems Impact Model, Phase 2 .....	144

<b>Roberts Carbon County Water and Sewer District</b>	
Roberts Wastewater System Improvements .....	77
<b>Ronan, City of</b>	
Stormwater System Improvements .....	162
<b>Roundup, City of</b>	
Musselshell Watershed Sustainable Irrigation Management Program .....	110
<b>Roundup, City of</b>	
Water System Improvements .....	122
<b>Shelby, City of</b>	
West Interceptor Water System .....	218
<b>Sheridan, Town of</b>	
Wastewater System Improvements.....	22
<b>Sidney, City of</b>	
Optimizing Water Development from the City of Sidney Well Field .....	220
<b>Sidney Water Users Irrigation District 1 and 2</b>	
Increasing Irrigation Efficiency: Districts 1 and 2, Phase 3 .....	64
<b>Sidney Water Users Irrigation District</b>	
Increasing Irrigation Efficiency: District 5, Lateral 2 .....	66
<b>Stanford, Town of</b>	
Water System Improvements .....	51
<b>Sun Prairie Village County Water and Sewer District</b>	
Water System Improvements .....	58
<b>Sweet Grass County Conservation District</b>	
Big Timber Creek Channel Stabilization.....	62
<b>Target Range Water and Sewer District</b>	
Replacing Obsolete Septic Systems .....	197
<b>Teton Conservation District</b>	
Eureka Reservoir Improvements.....	134
<b>Thompson Falls, City of</b>	
Transmission Main Replacement.....	221
<b>Tin Cup Water and Sewer District</b>	
Tin Cup Dam 2011/2010 Improvements .....	192
<b>Toston Irrigation District</b>	
Crow Creek Pumping Plant Rehabilitation .....	181
<b>Troy, City of</b>	
Water System Improvements .....	200

<b>University of Montana</b>	
An Experimental Assessment of the Ecological and Social Dimensions of Human-bear Conflict Mitigation .....	211
<b>University of Montana</b>	
Developing Wolf Population Monitoring Techniques to Advance Management and Conservation of Wildlife in Montana .....	204
<b>University of Montana Natural Heritage Program</b>	
Wetland and Riparian Mapping for the Lower and Middle Musselshell Watersheds.....	152
<b>Upper and Lower River Road Water and Sewer District</b>	
Water Distribution and Wastewater Collection, Phase 4.....	32
<b>White Sulphur Springs, City of</b>	
Water System Improvements .....	155
<b>Whitefish, City of</b>	
Haskill Basin Watershed Conservation and Preservation.....	128





## INTRODUCTION

The RRGL provides funding for projects that conserve, manage, develop, or preserve renewable resources in Montana. Governmental entities may apply to the program to obtain funding for resource-related projects. Past projects have included municipal water and sewer system improvements, irrigation system rehabilitation, geothermal energy investigations, watershed restoration, resource studies, and engineering and feasibility studies for eligible projects. Applications are due May 15 of each even-numbered year. DNRC staff reviews and ranks proposals from public entities and then presents a list of projects recommended for funding to the Governor. Recommendations to the Montana State Legislature for the 2011 legislative session and the status of current projects are contained in this report.

This biennium, grants of up to \$20,000 each were available to fund the planning of renewable resource projects and other eligible planning efforts. Applications for planning grants that satisfied project and applicant eligibility criteria were funded on a first come, first serve basis.

Irrigation Development grants were also available this biennium. Both private and public entities are eligible to apply for grants of up to \$15,000 per irrigation project.

Private entities are also eligible for both grant and loan funding for water-related projects under the RRGL. Montana's Constitution prohibits the Legislature from appropriating funds directly to private entities. Therefore, selection of projects occurs under a different process that involves review by DNRC staff and final approval by DNRC's director. Loan applications from private entities may be submitted anytime during the biennium. Currently, private grants for water resource development or improvements are limited to \$2,500 or 25% of the entire projects cost, whichever is less.





## **CHAPTER I**

### **The Renewable Resource Grant and Loan Program**

#### **Background**

The RRGL is the product of two earlier resource management programs: the Renewable Resource Development Program and the Water Development Program. The former Renewable Resource Development Program was established by the Legislature in 1975 to promote the development of Montana's renewable resources. Funds generated by the use of nonrenewable mineral resources were pledged toward the purchase, lease, planning, design, construction, or rehabilitation of projects that conserved, managed, developed, or preserved land, water, vegetation, fish, wildlife, recreation, and other renewable natural resources. Under the Renewable Resource Development Program, only governmental entities are eligible to apply for funding. The former Water Development Program was established by the Montana Legislature in 1981 to promote and advance the beneficial use of water, and to allow Montana's citizens full use of the state's water by providing grants and loans for water development projects and activities. Under the Water Development Program, both governmental entities and private persons were eligible to apply for funding.

In 1993, the Renewable Resource Development Program was combined with the Water Development Program to form the RRGL. The role of the DNRC was expanded to provide for DNRC's coordination of the development of the state's renewable resources. The RDB of DNRC thus assumed responsibility for administering the RRGL as stipulated under Title 85, part 6, MCA. Combining the two programs streamlined program administration but did not change applicant and project eligibility criteria.

The 2007 Legislature revised the funding structure of the RRGL by establishing two Natural Resources, State Special Revenue Account: the Natural Resources Projects SSRA and the Natural Resources Operations SSRA. The Projects SSRA receives revenue to be used exclusively for grants for designated projects authorized in statute. Funds from this account are shared by the RRGL and the RDGP. The Natural Resources Operations SSRA funds expenses necessarily incurred in the administration of these two natural resource grant programs. Other related agency expenses are also charged to the operations account. This change in funding structure is designed to ensure that funds from the RIT and other resource extraction revenue sources are expended as originally intended.

#### **Purpose**

The purpose of the RRGL is to further the state's policies, set forth in Section 85-1-101, MCA, regarding the conservation, development, and beneficial use of renewable resources. The goal of the program is to invest in renewable natural resource projects that preserve economic and other benefits of the state's natural heritage for the citizens of Montana.

#### **Project and Applicant Eligibility**

Grants and loans are available for projects that conserve, manage, develop, or preserve the state's water, land, vegetation, fish, wildlife, recreation, and other renewable resources. The majority of projects funded under this program are water resource projects, but forestry, soil conservation, renewable energy, and solid waste projects also have received funding. Project funding is available for construction, research, design, demonstration, and planning. Watershed projects that preserve and improve water quality and projects that help plan for future management and protection of water sources (such as groundwater assessment studies) have received funding in the past. Chapters II and III of this report presents information on RRGL loans and grants to public entities. Chapter IV describes loans and grants to private entities. Chapter V presents the Irrigation Development Grant Program for public and private entities, and Chapter VI describes emergency grants and loans to public entities. Chapter VII of this report summarizes public grants and projects funded by previous Legislatures.

## **Private Entities**

Private entities can also receive funding through the RRGL and through the irrigation development grant program described below. Applicants such as individuals, associations, partnerships, for-profit corporations, and not-for-profit corporations can apply for grants and loans for water-related projects that conserve, manage, use, develop, or preserve the state's water. Projects must also provide public benefits in addition to any private benefits. In 2009, the Legislature appropriated \$50,000 for grants to private entities. By law, grant funding for a single project may not exceed 25% of the total estimated cost, or 5% of the total appropriation, whichever is less. Private loans must be secured with real property and are made only to applicants who are credit worthy and willing to enter into a contract for loan repayment. Loans up to \$3 million are available to organizations such as water user associations and ditch companies.

DNRC manages private grant and loan applications under a process separate from state and local government entities. The Montana Constitution prohibits the Legislature from appropriating funds directly to a private entity. Therefore, funds appropriated by the Legislature are used to issue individual awards to private grantees. Criteria for the award of funds to private entities are specified in the law. Each application is reviewed and, based on statutory criteria funding recommendations are made to the DNRC director. The director has final authority over grants to private entities.

Irrigation system improvements, such as the conversion from flood irrigation to sprinkler irrigation, are the most common type of projects funded through private loans. Loans have also been provided for the development and improvement of rural water supply systems. Chapter IV of this report provides more examples of previously funded private loan projects.

## **Irrigation Development Program**

The Irrigation Development Program was initiated to assist producers with projects that would grow high-value crops such as potatoes and sugar beets and to expand the development of irrigated acreage in Montana. Grants up to \$15,000 per irrigation project for both private and public applicants are available through this program. The 61st Legislature appropriated \$300,000 for irrigation development grants. Chapter V of this report provides more information about irrigation development grant projects funded in 2009 and 2010.

## **Emergency Grants**

Statute allows DNRC to request up to 10% of the funds available for grants in a biennium to be used for emergency grants. DNRC may provide up to \$30,000 in a single emergency grant out of a total of \$100,000 to governmental entities to resolve water-related emergencies. Emergency funds may be granted for projects that, if delayed until the next regular legislative session, would result in substantial damages or legal liability. Requests for emergency funds are reviewed by DNRC staff and approved by the DNRC director. Chapter VI of this report provides information about applications for emergency assistance received in 2009 and 2010.

## **Planning Grants**

Project planning grants provide funding to governmental entities for activities that lead to a better RRGL grant application or assist a community with infrastructure planning. These grants range in value from \$5,000 to \$20,000 depending on the type of planning grant and have no match requirements. Types of planning activities funded include: PERs, feasibility studies, CIPs, and growth policies. Applicants must explain how the project would contribute to the conservation, management, development, or preservation of renewable resources in Montana. The grants are given on an "open-cycle" basis. The 61<sup>st</sup> Legislature appropriated \$800,000 for planning grants for the 2011 biennium. In FY 2010, the RRGL disbursed an additional \$175,000 in planning grants using reverted funds from a terminated project. Chapter VIII of this report provides information about grants awarded for those years.



## **Funding Limitations**

The law does not impose specific limitations on the amount of grant funding that the Legislature may provide for renewable resource projects proposed by governmental entities. Grant recommendations presented to the Long-Range Planning Subcommittee by DNRC are for limited amounts. These are consistent with limits imposed by the Legislature in the past and are put in place to obtain optimal public benefit from the investment of public funds. Guidelines used to develop funding recommendations were developed with input from the Long-Range Planning Subcommittee. Proposed funding levels do not constrain legislative authority to appropriate grants and loans in amounts the Legislature deems appropriate based on testimony presented in legislative hearings and consistent with current legislative priorities.

## **Funding Authority**

In 2009, the State of Montana received an infusion of federal funds due to the ARRA. The Legislature invested some of these funds in existing state programs that, in turn, freed up state general funds for other programs. Under the authority of HB 645, passed by the Sixty-first Legislature, \$4,148,796 was transferred from the state general fund to the Natural Resources Projects SSRA for RRGL grants. This amount supplemented the \$4,505,797 contributed to the Projects SSRA by the RIT and other resource extraction revenue sources for a total appropriation of \$8,654,593 to fund all eligible renewable resource projects for the 2011 biennium.

In addition to the \$8,654,593 appropriated for renewable resource grants, \$800,000 was appropriated for planning grants, \$300,000 for irrigation development grants, and \$50,000 for water project private grants. Because all eligible renewable resource grant projects were funded by this appropriation, the Sixty-first Legislature added a provision giving DNRC the authority to apply reverted funds from grant projects toward any other program authorized in HB 6 (RRGL) or HB 7 (RDGP).

The public and private renewable resource loan programs are funded through the issuance of general obligation and coal severance tax bonds.

## **Program Implementation**

Part 6 of Title 85 specifies DNRC's role in the management of the RRGL; by statute (85-1-605, MCA) DNRC only makes project-funding recommendations. The Legislature appropriates the actual awards of those grants and loans to governmental entities that it finds consistent with the policies and purposes of the program. In presenting recommendations to the Legislature, DNRC provides information about each project for legislative consideration. All public grant requests are ranked by DNRC to show the Legislature the potential value of a given project compared to all other grant requests. Grant requests that do not meet minimum technical and financial standards are not recommended by DNRC for funding. All recommendations made by DNRC may be rejected by the Legislature in favor of other considerations that the Legislature holds as higher priorities. Once the Legislature makes an award, DNRC manages the authorized grants and loans according to conditions set out in the DNRC report to the Legislature and in the legislative appropriations bill.

Acting within the limits of the authority provided by statute, DNRC provides the staffing necessary to administer state and local government assistance under the RRGL. Each legislative session, members of the Long-Range Planning Subcommittee review the funding recommendations provided by DNRC. In response, the committee provides DNRC direction for the future.

DNRC administers grants and loans to private entities within specific parameters for the award of these funds (85-1-606-614, MCA). DNRC publicizes the statutes and rules that govern these loans and sets application deadlines. Private entities are only eligible to apply for water-related projects. Private entities also comply with additional eligibility criteria, as set forth in 85-1-609 and 610, MCA.

## Rule-Making Authority

DNRC's role in administering the RRGL is limited to a coordinating role. Limited by its authority to adopt rules, DNRC cannot expand or limit the mission of the RRGL beyond legislative intent. DNRC does not have the authority to limit the amount of public grants or to narrow the range of eligible grants based on DNRC priorities. Title 85, MCA, directs DNRC to adopt rules that prescribe the application fee and content for grant and loan applications. DNRC also determines the ranking criteria used to evaluate and prioritize public grant applications and the process for awarding grants and loans to private entities according to statute. DNRC authority provides for the servicing of loans and determination of the terms and conditions for making grants and loans.

## Program Goals

DNRC's goals for administering the RRGL are carried out through solicitation of applications; evaluation of applications to provide the Legislature with a basis for the selection of projects that best support the purposes and stipulations of Title 85, MCA; and administration of grants and loans to comply with conditions of the authorization and applicable laws.

DNRC seeks to achieve the following specific program goals:

1. Inform the public and private sectors that grant and loan funding for water and other renewable resource projects is available, that certain applicant eligibility criteria for obtaining funds exist, and that projects that meet the purposes of Title 85, MCA, qualify for funding. To promote the program, DNRC provides specific information:
  - a. about the grant and loan program to state and local governmental entities most likely to sponsor projects eligible for funding. Information is provided through press releases, news articles, brochures mailed directly to potential applicants, presentations at conferences and other association events, and workshops conducted in communities across the state.
  - b. to targeted private entities to obtain applications for grant funds that will result in significant public benefit. Information is provided through press releases, and direct contact.
2. Coordinate with other state and federal agencies to provide information about government funding sources for water and other renewable resource projects, to facilitate a uniform application process, and to award funds without duplication.
3. Solicit public comment and suggestions for improvements to the program through administrative rule-making and legislative processes, during the solicitation for grant applications, and throughout the review of projects for funding.
4. Evaluate grant projects on the basis of technical merit and the resource benefits established in statute.
5. Effectively administer grants and loans to ensure that funds are used for allowable costs and that projects are executed in accordance with conditions set by the Legislature and in compliance with Title 85, MCA, and other applicable laws, without undue burden to the recipient.
6. Offer loans at the most affordable rates available through the sale of bonds.
7. Adequately secure loans to protect the investment of public funds.
8. Advise the Legislature concerning DNRC efforts to effectively administer the program according to statute and legislative intent.

## CHAPTER II

### Renewable Resource Grants to Public Entities

#### Application Administration and Project Review Procedures

The DNRC Resource Development Bureau (RDB) accepts applications for public grants and loans that are submitted or postmarked by May 15 of each even-numbered year. DNRC requires a \$250 application fee with each application.

#### Project Solicitation

DNRC solicits project applications broadly because DNRC seeks to maintain the competitive nature of the program. Those projects that most closely meet statutory priorities rank the highest and are most likely to rank above the cut-off point for available funding. Projects that do not rank competitively and fall below the projected funding line are less likely to receive legislative approval.

DNRC maintains an extensive mailing list to promote the program and to solicit applications from eligible applicants. Mailing lists were originally obtained from divisions within DNRC and from other state agencies. The lists include contacts from the university system, state agencies, municipalities, environmental organizations, water users associations, irrigation districts, water and sewer districts, Tribal leaders, conservation districts, and federal agencies.

Promotion for the 2010 application cycle began with press releases in February. DNRC sent press releases to all Montana daily newspapers and provided general program information, a telephone number, e-mail address, and address to request more information and application forms and guidelines. In addition, DNRC staff conducted workshops and made presentations to publicize funding opportunities through the RRGL.

The DNRC received 112 applications in May 2010 that requested a total of \$10.8 million. In the previous cycle, 92 applicants requested \$8.64 million in grant funding.

The RRGL application for this cycle requested the following information:

- A proposal abstract describing the project's merits.
- A technical narrative describing the project's purpose, history, and prior efforts; specific goals and objectives, as well as a discussion of project alternatives; and documentation supporting the technical narrative.
- A financial narrative and budget forms describing the project's funding structure.
- Affordability data, used to evaluate the local financial commitment for infrastructure projects, including a description of the applicant's ability to pay such as potential to generate revenue through fees or taxes.
- A project management plan which outlines the steps that will be made to ensure successful project implementation.
- A discussion of public and natural resource benefits achieved by the proposed project.
- An environmental assessment of the extent of any adverse environmental impacts that may occur as a result of the project.

#### Application Review

All applications received by the deadline are evaluated for completeness. DNRC notified applicants concerning missing documentation, application fees, or other basic requirements and provided time for applicants to submit additional material. DNRC then distributed the applications to a team of key reviewers for evaluation. **Figure 1** shows the flow of the grant application review and ranking process.



For the applications received in May 2010, the team included 24 key reviewers comprised of DNRC staff, and scientists and engineers from contracted private firms. Projects were assigned based on the reviewer's area of expertise. Key reviewers were given information about the program, application materials, and guidelines for reviewing applications.

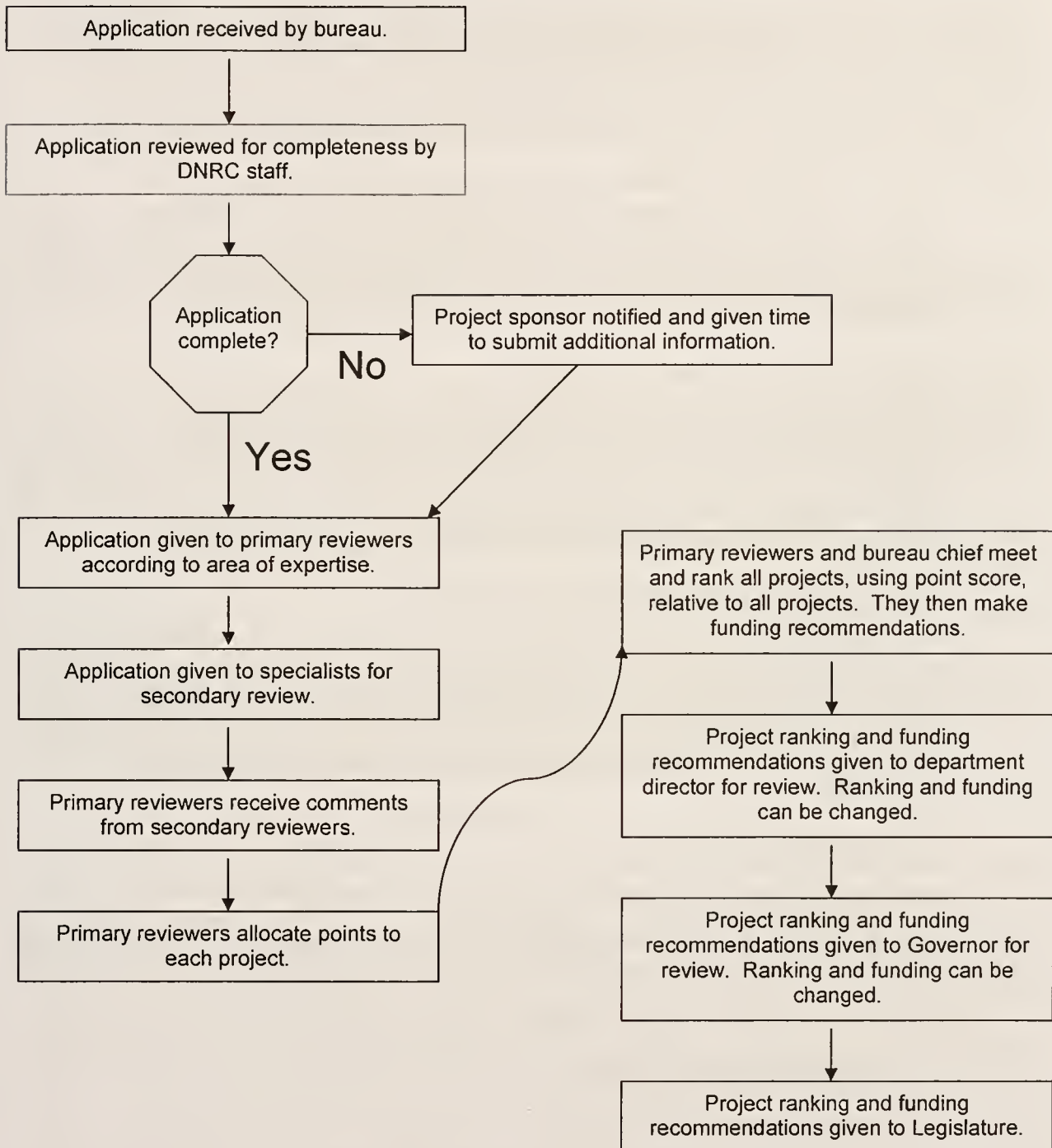
The technical review team evaluated each application to ensure that the proposal was technically and financially feasible. During project review, the reviewer could request additional detailed technical and financial information. With the results of their own evaluations and comments from agencies and outside experts, key reviewers assessed and documented the merits of each proposal based on standard review criteria outlined in the ranking form.

Each project was evaluated for the potential to cause adverse environmental impacts. In the event that long-term environmental impacts could occur as a result of the project, contingencies were attached to the funding recommendations to minimize impacts and to ensure that appropriate steps would be taken to protect the environment.

Application reviewers have raised concerns regarding project budgets containing uncommitted federal grants. DNRC recognizes these concerns and has addressed the problem in two ways: (1) DNRC will initiate a contract for projects that can be demonstrated to benefit or develop renewable resources as an isolated part of a phased project or as a stand-alone project; and (2) alternatively, DNRC will make provisions to initiate contracts with these projects within the biennium. If the project has not received the required matching funds by December 2010, DNRC will review the proposed budget. If it is determined that the match funding will not be available in the near future or a phased approach will not be workable, the grant will revert to the RRGL account and the funding will be used for other Resource Development Bureau projects.

The statute requires DNRC to solicit views of interested and affected parties. Local, state, and federal agencies, environmental groups, private organizations, and universities are solicited for input during the technical review of applications. DNRC developed guidelines specifically for application review to ensure a consistent basis for reviewing applications.

**FIGURE 1**      **Flowchart of Grant Application Review and Ranking Process**



## Project Ranking Criteria

To obtain an objective evaluation of all applications, DNRC developed a standard ranking form containing review instructions and guidelines. Each key reviewer completes a ranking form for each application to document the merits of the proposal and the resulting score.

Each key reviewer assigns a score to reflect project merit under the following five primary categories:

1. Financial Feasibility (-100 points)

Financial feasibility is determined based on information included in the application. DNRC evaluates the financial feasibility of the proposed project or study based on the budget submitted with the application, the affordability of the project to the users, and feasibility of the proposed funding scenario. Deficiencies in the financial plan are identified and could result in the loss of up to 100 points.

2. Adverse Environmental Impact (-100 points)

Each application includes an environmental evaluation prepared by the applicant or its consultant. In the case of public facility project applications, the environmental evaluation is part of the Uniform Application and is reflected in the PER. Short-term impacts, including temporary construction impacts, should be addressed as well as long-term impacts, both positive and negative. Inadequately evaluating environmental impacts, or selecting alternatives which will result in adverse environmental impacts, could result in the loss of up to 100 points.

3. Project Management and Implementation (-100 points)

Each application includes a project management and implementation plan. DNRC evaluates the plan to determine the adequacy of the applicant to manage or provide for the management of the proposed project, including records management and grant and loan administration. Specific areas evaluated include staffing and coordination, public involvement, and contract management (including the management of all grant agreements), contracts with consultants, and construction contracts. Deficiencies in project management and implementation could result in the loss of up to 100 points.

4. Technical Feasibility (300 points)

Outlines are included in the application guidelines for the Technical Narrative or, in the case of public facility projects, the PER. To facilitate review of the Technical Narrative or PER, it is recommended that these outlines be followed in preparing the application. Each application is evaluated on the basis of the following criteria:

- A. Compliance with the prescribed outline and required information;
- B. Adequacy of the alternatives analysis;
- C. Adequacy of cost estimates for potential alternatives and the preferred alternative;
- D. Soundness of the basis used in selecting the preferred alternative;
- E. Feasibility of the project's implementation schedule; and
- F. The quality of supporting technical data submitted with the application. The Technical Narrative or, in the case of a public facility project application, the PER provides DNRC with information used to evaluate technical feasibility of the proposed project and could result in the award of up to 400 points.



## 5. Resource and Citizen Benefits (700 Points)

The purpose of the RRGL is to further state policies set forth in 85-1-101, MCA, regarding the conservation, development, and beneficial use of water resources and to invest in renewable natural resource projects that will preserve for the citizens of Montana the economic and other benefits of the state's natural heritage. Resource and citizen benefits of proposed projects are evaluated by DNRC and could result in the award of up to 600 points. Resource and citizen benefits associated with each application are evaluated on the basis of the following criteria:

- A. How the project would measurably enhance renewable resources in Montana through implementing one or more of the following management practices:
  - 1) **Resource conservation.** Will the project ensure measurable future renewable resource benefits through implementation of new or improved efficiencies and utilization practices? Will it improve water-use efficiency through installation of new or improved water meters or other measuring devices?
  - 2) **Resource development.** Will the project provide new benefits or enhance existing benefits through development of a renewable resource? For example, will the project support development of state, Tribal, or federal water projects including regional water systems? Will it develop off-stream or tributary water storage or develop hydropower?
  - 3) **Resource preservation.** Will the project protect and thereby preserve the existing quality of a renewable resource? Will it reduce agricultural chemical use or prevent point sources of pollution?
- B. How the project would contribute to economic development in Montana or help existing businesses;
- C. How the project increases understanding of how a renewable resource would benefit Montana citizens
- D. How the project coordinates with ongoing or planned actions;
- E. How the project benefits multiple uses; and
- F. Evidence of public support such as letters, records of comment at public meetings, and citizen group support.

After each key reviewer determined the score for assigned projects, all of the key reviewers and the bureau chief met to discuss the projects and scores proposed. During this process, the key reviewer provided a short presentation about each project reviewed and the score given. After all projects were presented, the individual scores for each category on the scoring sheet were discussed. The team then decided the scores each project should receive in relation to all projects. Discussion by the entire review committee increases ranking fairness by minimizing inconsistencies between scores given by individual reviewers. Final team scores were recorded on a ranking spreadsheet to document the ranking process.

DNRC's ranking system is used to determine the relative merit of every proposal submitted for grant funding. Ranking scores are used as a guide for the staff to select projects that best serve the program's objectives as stipulated by statute and to summarize information for DNRC's director. Proposal recommendations are presented to the Governor for grant funding in the order DNRC staff rank them. Ranking scores are not binding. Either DNRC's director or the Governor may make adjustments to the recommendations prepared by DNRC to reflect their assessment of natural resource and other policy priorities. An appropriations bill containing project ranking recommendations is drafted and introduced to the Legislature. Actual funding decisions are made by the Legislature. Not bound by DNRC's review

criteria or the Governor's final ranking, the Legislature ultimately authorizes funding for the projects in the order of priority and in the amounts it judges will best serve the state.

### **Funding Recommendations**

All feasible grant requests were ranked according to standard criteria in order to select those that would most efficiently use state natural resources in accordance with statutory guidelines. In conjunction with its recommendation for funding priority, DNRC made its recommendations concerning the amount of funding to be awarded each project (**Figure 2**). The 2010 grant applications recommended for funding during the 2013 biennium included eight types of projects (**Figure 3**).

With the Governor's approval, final funding recommendations are presented to the Legislature as part of this report. These recommendations do not impose limits on the amount of funding the Legislature may provide to any governmental entity for a single grant project.

Although grant funding for public projects is not limited by statute, in the past the Legislature has limited its grant funding awards to a maximum of \$100,000 per project. This policy reflects the Legislature's interest in providing funding for a large number of projects. This policy prompts the leveraging of additional grants, loans, and in-kind services and encourages greater geographical distribution of limited grant funds.

### **Project Management**

After the appropriations bill is enacted to authorize grants and loans, DNRC will notify applicants of their funding status. Sponsors of funded projects are reminded that work on their projects may not begin before entering into a grant or loan agreement with DNRC. DNRC will not reimburse any project cost incurred before the legislative authorization is given or before a formal funding agreement is executed.

### **Project Monitoring**

Procedures for monitoring projects are governed by a project grant contract agreement between DNRC and the project sponsor. The equivalent of 3.5 full-time staff administers the active construction, planning, research, and public information grants. The RRGL typically oversees 350 to 400 active projects at any given time.

DNRC attempts to make site inspection visits to all projects during the construction phase. Site visits are made to spot check for problems or to respond to a request for assistance from the project sponsor. Budget and staffing constraints preclude DNRC site involvement at every project site.

Grant agreements, as with contracts used by DNRC for other state and federal grant programs, require quarterly progress reports, expenditure reports, and a final report. During the contract term, the project sponsor must submit quarterly reports to DNRC. These reports must reflect the percentage of the project completed, the project costs to date, any problems encountered, and the need for any agreement amendment. Projects are closely monitored each quarter when quarterly reports are submitted. Program staff document decisions and conversations that affect ongoing projects, make notes to the file, and document important conversations with correspondence. Amendments to grant agreements are prepared and issued in response to any problems that require changes to the time line or budget.

Project sponsors submit claims and obtain reimbursement of allowable costs from DNRC. Invoices may be submitted monthly, and all costs must be supported by an invoice or receipt.

## **Project Evaluation**

DNRC evaluates grants funded under the RRG through ongoing monitoring. Upon project completion, DNRC requires submission of a final project report to document project history and the quantifiable results of the expenditure of grant dollars. This report summarizes grant expenditures, documents the work accomplished, and compares project objectives as presented to the Legislature with final projects results. Evaluation through a final project report enables DNRC to measure how well the project implements the program goals of conserving, developing, managing, and preserving Montana's renewable resources. Projects are considered successful if they complete the scope of work outlined in the grant agreement.





**FIGURE 2 2010 Grant Applications by Order of Ranking Recommendation**

<b>Ranked Order</b>	<b>Project Sponsor / Project Name</b>	<b>Recommended Grant Funding</b>	<b>Cumulative Recommended</b>
1	<b>MT DNRC Water Resources Division</b> Hydropower Feasibility Study	\$100,000	100,000
2	<b>Sheridan, Town of</b> Wastewater System Improvements	\$100,000	200,000
3	<b>Deer Lodge, City of</b> Wastewater System Improvements	\$100,000	300,000
4	<b>Fergus Conservation District</b> Big Spring Creek Stream Restoration at the Machler Conservation Easement	\$100,000	400,000
5	<b>MT DNRC Trust Land Management Division</b> Smith Lake Dam Rehabilitation	\$100,000	500,000
6	<b>Culbertson, Town of</b> Wastewater System Improvements	\$100,000	600,000
7	<b>Upper and Lower River Road Water and Sewer District</b> Water Distribution and Wastewater Collection, Phase 4	\$100,000	700,000
8	<b>Beaverhead Conservation District</b> Poindexter Slough Fishery Enhancement	\$100,000	800,000
9	<b>Pondera Conservation District</b> C Canal Rehabilitation	\$100,000	900,000
10	<b>Buffalo Rapids Project District 1</b> Lateral 26.4 Conversion	\$100,000	1,000,000
11	<b>Pondera Conservation District</b> Wasteway Rehabilitation and Water Quality Improvement	\$100,000	1,100,000
12	<b>Flathead County</b> Bigfork Stormwater System Improvements	\$100,000	1,200,000
13	<b>Hebgen Lake Estates Water and Sewer District</b> Wastewater System Improvements	\$100,000	1,300,000
14	<b>Harlem, City of</b> Wastewater System Improvements	\$100,000	1,400,000
15	<b>Polson, City of</b> Water System Improvements	\$100,000	1,500,000
16	<b>Amsterdam-Churchill County Sewer District No. 307</b> Wastewater System Improvements	\$100,000	1,600,000
17	<b>Stanford, Town of</b> Water System Improvements	\$100,000	1,700,000
18	<b>MT Fish, Wildlife and Parks</b> Chadbourne Diversion Dam Repair and Selective Fish Passage Retrofits	\$99,500	1,799,500
19	<b>Helena Valley Irrigation District</b> Pump No. 2 Rehabilitation	\$100,000	1,899,500
20	<b>Belt, Town of</b> Water System Improvements	\$100,000	1,999,500
21	<b>Sun Prairie Village County Water and Sewer District</b> Water System Improvements	\$100,000	2,099,500
22	<b>Fort Belknap Indian Community</b> Fort Belknap Indian Community Water Conservation	\$100,000	2,199,500
23	<b>Sweet Grass County Conservation District</b> Big Timber Creek Channel Stabilization	\$99,998	2,299,498

24	<b>Sidney Water Users Irrigation Districts 1 and 2</b> Increasing Irrigation Efficiency: Districts 1 and 2, Phase 3	\$100,000	2,399,498
25	<b>Sidney Water Users Irrigation District</b> Increasing Irrigation Efficiency: District 5, Lateral 2	\$100,000	2,499,498
26	<b>Clinton Irrigation District</b> Schoolhouse Lateral Pipeline Conversion	\$100,000	2,599,498
27	<b>East Bench Irrigation District</b> Main Canal Check Structure Rehabilitation	\$100,000	2,699,498
28	<b>Lower Musselshell Conservation District</b> Lower Musselshell Delphia Melstone Irrigation Structure Rehabilitation Lining	\$100,000	2,799,498
29	<b>Madison Conservation District</b> South Meadow Creek Water Efficiency	\$100,000	2,899,498
30	<b>Confederated Salish and Kootenai Tribes</b> Jocko Upper S Canal Lining	\$100,000	2,999,498
31	<b>Malta Irrigation District</b> Dodson North Canal Siphons Replacement	\$100,000	3,099,498
32	<b>Roberts Carbon County Water and Sewer District</b> Roberts Wastewater System Improvements	\$100,000	3,199,498
33	<b>Chippewa Cree Tribe of the Rocky Boy's Reservation</b> Dry Fork Farms Irrigation Enhancement	\$97,429	3,296,927
34	<b>Flathead Joint Board of Control</b> Jocko Upper J Canal Diversion Structure	\$100,000	3,396,927
35	<b>Lockwood Irrigation District</b> Intake Canal Spillway Replacement	\$100,000	3,496,927
36	<b>Glendive, City of</b> Glendive Floodplain Feasibility Study	\$100,000	3,596,927
37	<b>Fort Shaw Irrigation District</b> Water Quality and Quantity Improvements	\$100,000	3,696,927
38	<b>MT DNRC Water Resources Division</b> East Fork Rock Creek Diversion and Fish Screen	\$100,000	3,796,927
39	<b>Daly Ditches Irrigation District</b> Hedge Canal Improvement	\$100,000	3,896,927
40	<b>Gallatin Gateway County Water and Sewer District</b> Wastewater System Improvements	\$100,000	3,996,927
41	<b>Greenfields Irrigation District</b> Big Coulee Wastewater and Water Quality	100,000	4,096,927
42	<b>Park Conservation District</b> Park-Branch Paradise Canal Water Efficiency	\$100,000	4,196,927
43	<b>Huntley Project Irrigation District</b> Lower Canal Seepage Lining	\$100,000	4,296,927
44	<b>Anaconda-Deer Lodge County</b> Systemwide Water Meter Installation	\$100,000	4,396,927
45	<b>Fairfield, Town of</b> Water System Improvements	\$100,000	4,496,927
46	<b>Fort Peck Tribes</b> Lateral L-2M Rehabilitation	\$100,000	4,596,927
47	<b>Hardin City of</b> Water System Improvements	\$100,000	4,696,927
48	<b>Bitter Root Irrigation District</b> Siphon 1 Improvement, Phase 2	\$100,000	4,796,927
49	<b>North Havre County Water District</b> Water System Improvements	\$100,000	4,896,927

50	<b>Roundup, City of</b> Musselshell Watershed Sustainable Irrigation Management Program	\$60,000	4,956,927
51	<b>MT DNRC Water Resources Division</b> Clark Fork River Basin Task Force	\$32,000	4,988,927
52	<b>Green Mountain Conservation District</b> Tuscor Creek Restoration	\$84,778	5,073,705
53	<b>Lewistown, City of</b> East Fork Dam Repair	\$100,000	5,173,705
54	<b>Crow Tribe of Indians</b> Crow Agency Water System Improvements, Phase 4A	\$100,000	5,273,705
55	<b>Hill County Water District</b> Water System Improvements	\$100,000	5,373,705
56	<b>Roundup, City of</b> Water System Improvements	\$100,000	5,473,705
57	<b>Kevin, Town of</b> Water System Improvements, Phase 3	\$100,000	5,573,705
58	<b>LaCasa Grande Water and Sewer District</b> Wastewater System Improvements	\$100,000	5,673,705
59	<b>Whitefish, City of</b> Haskill Basin Water Conservation and Preservation	\$100,000	5,773,705
60	<b>Ravalli County</b> LiDAR Mapping for Flood Hazard Identification, Phase 3	\$75,000	5,848,705
61	<b>Lockwood Water and Sewer District</b> Wastewater System Improvements	\$100,000	5,948,705
62	<b>Teton Conservation District</b> Eureka Reservoir Improvements	\$100,000	6,048,705
63	<b>East Helena, City of</b> Wastewater System Improvements	\$100,000	6,148,705
64	<b>Missoula County</b> Spring Meadows Sewer	\$100,000	6,248,705
65	<b>Missoula County Office of Planning and Grants</b> Missoula County LiDAR Mapping	\$50,000	6,298,705
66	<b>MT Water Resources Division</b> Martinsdale Supply Canal Headworks Rehabilitation	\$98,688	6,397,393
67	<b>Ravalli County Environmental Health</b> Bitterroot Valley Septic Systems Impact Evaluation Model, Phase 2	\$73,745	6,471,138
68	<b>Foy's Lakeside County Water and Sewer District</b> Water System Improvements	\$100,000	6,571,138
69	<b>Pablo/Lake County Water and Sewer District</b> Water System Improvements	\$100,000	6,671,138
70	<b>Cut Bank, City of</b> Water System Improvements, Phase 4	\$100,000	6,771,138
71	<b>University of Montana Natural Heritage Program</b> Wetland and Riparian Mapping for the Lower and Middle Musselshell Watersheds	\$99,934	6,871,072
72	<b>Bozeman High School, Montana School District No. 7</b> Mandeville Creek Restoration and Community Education	\$100,000	6,971,072
73	<b>White Sulphur Springs, City of</b> Water System Improvements	\$100,000	7,071,072
74	<b>MT DNRC Water Resources Division</b> Cooney and Deadman's Basin Automated Instrumentation	\$100,000	7,171,072



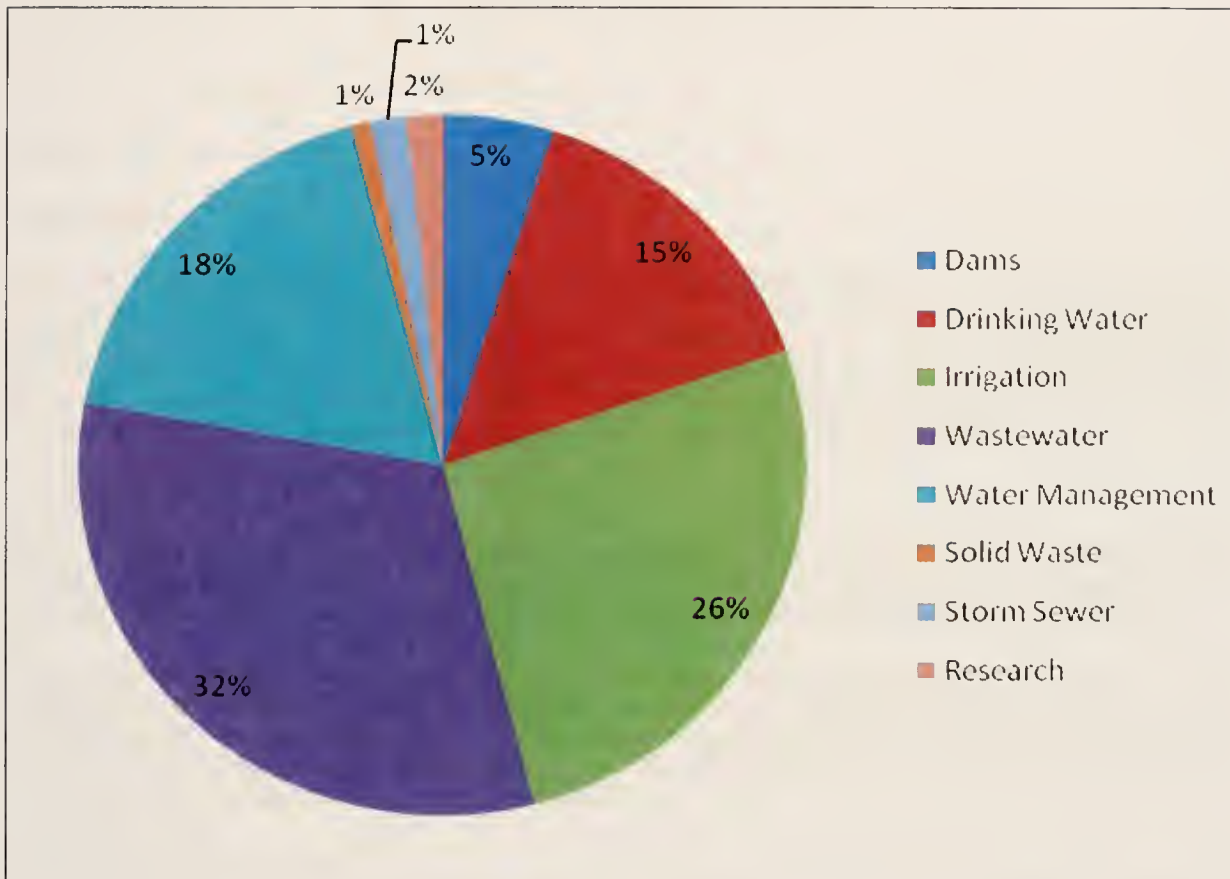
75	<b>Park Conservation District</b> Livingston Ditch Water Efficiency and Infrastructure Protection	\$100,000	7,271,072
76	<b>Carbon Conservation District</b> Whitehorse Canal Company – River Bank Stabilization	\$82,950	7,354,022
77	<b>Ronan, City of</b> Stormwater System Improvements	\$100,000	7,454,022
78	<b>Fromberg, Town of</b> Water System Improvements	\$100,000	7,554,022
79	<b>Jordan, Town of</b> Water System Improvements	\$100,000	7,654,022
80	<b>Lower Yellowstone Irrigation Project Board of Control</b> Lower Yellowstone On-Farm Water Conservation Measures	\$100,000	7,754,022
81	<b>Butte- Silver Bow Consolidated City-County Government</b> Big Hole River Pumpstation Rehabilitation	\$100,000	7,854,022
82	<b>Manhattan, Town of</b> Water System Improvements	\$100,000	8,954,022
83	<b>North Powell Conservation District</b> Blackfoot Irrigation Efficiency	\$60,000	8,014,022
84	<b>Kalispell, City of</b> Woodland Park Pond Remediation	\$100,000	8,114,022
85	<b>MT DNRC Water Resources Division</b> StreamStats Interactive Web Map Application	\$100,000	8,214,022
86	<b>Libby, City of</b> Wastewater Collection System and Treatment Facility Upgrades	\$100,000	8,314,022
87	<b>Toston Irrigation District</b> Crow Creek Pumping Plant Rehabilitation	\$100,000	8,414,022
88	<b>Em-Kayan Water and Sewer District</b> Water System Improvements	\$100,000	8,514,022
89	<b>Gallatin County Solid Waste District</b> Logan Landfill Waste-to-Energy Feasibility Study	\$100,000	8,614,022
90	<b>Hill County Conservation District</b> Milk River Basin Riparian and Hydrology Restoration	\$54,245	8,668,267
91	<b>Brady County Water and Sewer District</b> Water System Improvements	\$100,000	8,768,267
92	<b>Lincoln Conservation District</b> Sinclair Creek Watershed Improvement	\$100,000	8,868,267
93	<b>Tin Cup Water and Sewer District</b> Tin Cup Lake Dam Improvements	\$94,638	8,962,905
94	<b>Melrose Water and Sewer District</b> Wastewater System Improvements	\$100,000	9,062,905
95	<b>Augusta Water and Sewer District</b> Wastewater System Improvements	\$100,000	9,162,905
96	<b>Target Range Water and Sewer District</b> Replacing Obsolete Septic Systems	\$100,000	9,262,905
97	<b>Carbon Conservation District</b> Pleasant Valley Canal Rehabilitation	\$100,000	9,362,905
98	<b>Troy, City of</b> Water System Improvements, Phase 3	\$100,000	9,462,905
99	<b>MT DNRC Water Resources Division</b> Water Resource Survey Framework	\$71,000	9,533,905



<b>100</b>	<b>University of Montana</b> Developing Wolf Population Monitoring Techniques to Advance Management and Conservation of Wildlife in Montana	\$100,000	9,633,905
<b>101</b>	<b>Lockwood Area/Yellowstone County Water and Sewer District</b> Water Treatment Plant Clearwell Addition	\$100,000	9,733,905
<b>102</b>	<b>Eureka, Town of</b> Wastewater System Upgrade and Expansion	\$100,000	9,833,905
<b>103</b>	<b>Joliet, Town of</b> Water System Improvements	\$100,000	9,933,905
<b>104</b>	<b>University of Montana</b> An Experimental Assessment of the Ecological and Social Dimensions of Human-bear Conflict	\$99,067	10,032,972
<b>105</b>	<b>Bigfork County Water and Sewer District</b> Water Supply and Transmission Main Improvements	\$100,000	10,132,972
<b>106</b>	<b>Park County</b> Shields River Surface and Groundwater Analysis, Planning and Long-Range Policy Formulation	\$81,192	10,214,164
<b>107</b>	<b>Petroleum County Conservation District</b> Horse Creek Coulee Water Storage	\$82,286	10,296,450
<b>108</b>	<b>Shelby, City of</b> West Interceptor Water System	\$100,000	10,396,450
<b>109</b>	<b>Sidney, City of</b> Optimizing Water Development from the City of Sidney Well Field	\$100,000	10,496,450
<b>110</b>	<b>Thompson Falls, City of</b> Transmission Main Replacement	\$100,000	10,596,450
<b>TOTAL FUNDS RECOMMENDED</b>		<b>\$10,596,450</b>	
<b>Projects Recommended for No Funding</b>			
	<b>Cascade Conservation District</b> Whitmore Ravine Erosion Control and Storm Drainage, Phase 1	\$0	
	<b>Paradise Valley Irrigation District</b> Main Canal Water Measurement	\$0	



**FIGURE 3 Requested Funding by Project Type**





## Project No. 1

<b>Applicant Name</b>	Montana Department of Natural Resources and Conservation Water Resources Division State Water Projects Bureau		
<b>Project Name</b>	Hydropower Feasibility Study		
<b>Amount Requested</b>	\$ 100,000		
<b>Other Funding Sources</b>	\$ 11,600	In-kind services DNRC WRD SWPB	
<b>Other Funding Source</b>	\$ 23,780	DNRC Water Storage Account	
<b>Total Project Cost</b>	\$ 135,380		
<b>Amount Recommended</b>	\$ 100,000		

## **Project Summary**

### Project History

DNRC owns several state water storage projects that are administered by the SWPB. Of these, only Toston Dam currently has hydropower facilities. The FERC recently directed the SWPB to perform due diligence on the addition of hydropower facilities to three existing dams, Tongue River, Cooney, and Painted Rocks. As a result, SWPB proposes to hire a consultant to study the feasibility of adding hydropower generation to these three dams. If feasibility studies are favorable, renewable energy resources, in the form of hydropower, might ultimately be added to these state projects.

### Technical Approach

SWPB evaluated four alternatives for performing the feasibility study. These included no action, study of the technical feasibility of adding hydropower but defer the economic feasibility study and design until a later date, conduct the feasibility studies with SWPB, and hire a consultant to perform feasibility studies.

SWPB proposed to hire a consultant to perform the feasibility studies because neither no action nor the partial study will satisfy the FERC due diligence requirements. SWPB could not assign staff to the feasibility studies without compromising its other assigned responsibilities. If funded, SWPB would issue a RFP for professional services during August 2011. The consultant would be selected during September 2011 and would complete the studies by March 2012.

Specific tasks to be accomplished:

- Contract with a consultant to perform feasibility studies on the addition of hydropower facilities at Cooney, Painted Rocks and Tongue River dams.

## **Resource and Citizen Benefits Analysis**

The feasibility studies would not directly impact resources or citizen benefits. If the construction of hydropower facilities ultimately occurs at any of the three dams, electrical energy could be extracted from released water. Thus, the feasibility studies potentially could conserve, manage and develop a hydropower resource that currently is not used. Revenue streams from the developed hydropower would provide a source of income to SWPB and the State of Montana. Local tax bases would benefit from construction of the hydropower facilities as well. Carbon credits from new hydropower facilities might be significant and valuable. Construction of hydropower facilities also might benefit other objectives that state water storage projects currently support, including irrigation, fisheries, and recreation.

The Tongue River WUA, the Tongue River Electric Cooperative and two private citizens submitted letters of support for this project.

## Project Management

SWPB will administer the project. SWPB staff will prepare RFP, select the consultant, and prepare contracts. Thereafter, SWPB staff will also monitor project progress. SWPB proposed a reasonable plan to manage and implement the project. The project will begin by August 2011 and will conclude by June 2012.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$ 4,050	\$4,050
Professional & Technical	\$100,000	\$0	\$31,330	\$131,330
Construction	\$0	\$0	\$0	\$0
Total	\$100,000	\$0	\$35,380	\$ 135,380

The budget estimate for consulting fees was based on a recent quote from a consultant to perform hydropower feasibility studies at Ruby Reservoir. The application did not include the details of that quote and the extrapolation of that quote to the other dams might have limitations. Otherwise, the budget for this project is reasonable. The budget also includes funds from other SWPB accounts. No backup plan was presented if RRGL funding is not authorized.

## Environmental Evaluation

The project is a study and, as a result, has no significant environmental impacts.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## Project No. 2

<b>Applicant Name</b>	Sheridan, Town of
<b>Project Name</b>	Wastewater System Improvements
<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 750,000 TSEP
	\$ 450,000 CDBG
	\$ 394,000 Federal Appropriation Grant
	\$2,710,000 RD Grant
	<u>\$2,710,000</u> RD Loan
<b>Total Project Cost</b>	\$7,114,000
<b>Amount Recommended</b>	\$ 100,000

## Project Summary

### Project History

Sheridan provides sewer service to a population of approximately 700 people via a gravity collection system and single cell discharging facultative treatment lagoon. The DEQ has issued an administrative order against Sheridan to correct groundwater and surface water contamination issues related to a severely undersized pond cell and a leaking pond embankment. The design capacity of the lagoon cell is 60,000 gpd compared to an average summer loading in excess of 250,000 gpd. This has resulted in failure to meet discharge limits and a significant and measureable contamination of surface water to



Indian Creek, in the Ruby River watershed. Soil surveys indicate that the pond embankment is constructed largely of coarse sand and gravel. The pond consistently leaks around 62,000 gpd of poorly treated wastewater flows into the very shallow groundwater aquifer. As a result of the administrative order, Sheridan is facing administrative penalties and is no longer able to allow residential and commercial development. The town must correct the wastewater treatment deficiencies by November 30, 2012.

### Technical Approach

The preferred alternative involves eliminating the facultative lagoon and surface discharge and replacing it with an aerated lagoon/storage lagoon system with a land application discharge. The PER and amendment thoroughly evaluated all viable alternatives, including variations on lagoon system treatment, various sites for new wastewater infrastructure, and mechanical treatment. An alternative was selected via a detailed and weighted decision making matrix that considered not only of cost, but also technical feasibility, environmental impacts, public health and safety, O&M, and public opinion. The selected alternative included the land application alternative in which the town has successfully negotiated land agreements with the owner.

A construction sequencing process has been proposed to allow the existing wastewater treatment lagoon to remain in service until the piping improvements, lift stations, storage lagoons, and irrigation improvements are completed. For an interim period, flows will be pumped directly to the storage lagoons and irrigation system while the existing lagoon cells are cleaned and reconstructed to eliminate leakage and provide aeration for primary treatment purposes. The applicant and its engineer have worked closely with DEQ throughout the planning process to select an alternative that is acceptable to the regulatory agency in terms of both final solution and implementation process.

Specific tasks to be accomplished:

- Replacement of an existing gravity main from the lagoon to the south side of Mill Creek to collect west collection area wastewater flow to the new wastewater lift station;
- Installation of a wastewater lift station and forcemain to transfer wastewater flow to the treatment lagoon;
- Construction of an aerated treatment lagoon, blower building and aerations system;
- Installation of an effluent lift station and forcemain to transfer treated wastewater to the storage lagoons;
- Construction of storage lagoons;
- Installation of an irrigation pumping system; and
- Improvements to expand and existing irrigation pivot to irrigate current irrigation with treated effluent.

### **Resource and Citizen Benefits Analysis**

Eliminating the 62,000 gpd of wastewater leaking into the shallow groundwater aquifer will preserve groundwater supplies. In an area where groundwater is uniquely suited for flood irrigation due to shallow aquifers, the potential for animals and humans to come in contact with contaminated water supplies is significant. Eliminating the surface water discharge by implementing a non-discharge compliant land application process will prevent the discharge of poorly treated wastewater to surface water supplies, particularly along a watershed that relies on its surface water for recreational purposes, tourism, and fisheries. The project also includes the development of an additional 80 acres of irrigated family farmland. Treated wastewater will be applied at agronomic rates for the specific site and prevent the need for use of chemicals for crop fertilization. Finally, installation of flow meters and pump stations on each side of the aeration lagoon and within the irrigation system will allow for efficient management of the wastewater as a renewable resource.

The completed project will have multiple-use benefits because it will provide both wastewater treatment to the residents of Sheridan and an irrigable water supply, allowing for expanded crop development. Development within the Town of Sheridan can resume, restoring the potential for a sustainable and potentially growth-oriented economic conditions. And finally, public health and safety will be protected.

### **Project Management**

The proposed project provides a project management plan that is consistent with the RRGL requirements. The applicant has already finalized land agreements for new infrastructure and is working closely with DEQ to address interim non-compliance requirements and an acceptable project implementation plan.

### **Financial Assessment**

<b>Budget Item</b>	<b>RRGL Grant</b>	<b>RRGL Loan</b>	<b>Match</b>	<b>Total</b>
<b>Administration</b>	\$0	\$0	\$147,000	<b>\$147,000</b>
<b>Professional &amp; Technical</b>	\$0	\$0	\$1,026,601	<b>\$1,026,601</b>
<b>Construction</b>	\$100,000	\$0	\$5,840,399	<b>\$5,940,300</b>
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$7,014,000</b>	<b>\$7,114,000</b>

A project in excess of \$7 million is a significant undertaking for a community of just over 600 residents and 400 connections. Despite this, the project must be completed or the alternative is the potential loss of the wastewater treatment process either through regulatory pressure or a catastrophic failure of existing infrastructure. The applicant has worked extensively with RD and CDBG, demonstrating a strong likelihood that these two funding programs will meet anticipated funding levels. Likewise, the project is a strong candidate for funding through TSEP and RRGL, due to the resource and public health implications of not completing the project. A federal appropriation has been requested to help alleviate some of the financial pressures of this project on the residents. Although federal funding might be unlikely, the applicant has been actively pursuing this funding with the Montana delegation. The combined water and sewer cost per month upon completion of the proposed project will be \$79.61, which is 196.7% of the utility's combined systems target rate under the proposed funding strategy. Further, this rate is consistent with a 40-year loan at 3.25% (hardship interest rate anticipated) through RD. Other funding scenarios have been considered that exclude federal appropriation funding and RD funding, instead relying on SRF funding. In these cases, rates could reach a combined level of \$150.73 per month, or 372.4% of the system target rate.

### **Environmental Evaluation**

The environmental evaluation was thorough, complete, and involved coordination with various environmental agencies with oversight in the area. The project is not anticipated to have significant long-term negative impacts on the environment.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 3

<b>Applicant Name</b>	Deer Lodge, City of
<b>Project Name</b>	Wastewater System Improvements
<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 59,963 Applicant
	\$ 500,000 TSEP
	\$ 200,000 STAG WRDA
	<u>\$3,885,349</u> SRF Loan
<b>Total Project Cost</b>	\$4,745,312
<b>Amount Recommended</b>	\$ 100,000

### **Project Summary**

#### Project History

The Deer Lodge wastewater treatment facility, constructed in 1985, consists of a three cell aerated lagoon facility with one settling cell and UV disinfection. The collection system has an excessive amount of inflow and infiltration which results in significantly higher summertime flows. In 2009, the city constructed a slip lining project to address some of the inflow and infiltration issues. The city plans to construct another phase of slip lining in the near future. In 1998, as a participant of the Voluntary Nutrient Reduction Program, Deer Lodge signed a MOU volunteering to reduce summertime nutrient loading into the Clark Fork River by diverting 100% of its wastewater effluent to land application. The current discharge permit requires zero discharge to the river from June 21 through September 21. In 2000, Deer Lodge constructed and began operating an effluent land application system on the Grant Kohrs Ranch National Historic Site, adjacent to the treatment facility. The land application system has not met the requirements of the discharge permit. Grant Kohrs Ranch has accepted effluent only through August and the irrigation site is less than half of the acreage needed. The result is summertime discharge to the river, which is a violation of the discharge permit. In addition, Grant Kohrs has informed the city that it will discontinue the land application system after 2010. Therefore, the city needs to find an alternate location for land application.

A PER was completed in 2010 to address the deficiencies in the wastewater system. In addition to the collection system and effluent disposal system issues, the existing wastewater treatment facility is at the end of its service life and does not meet current regulations. The existing UV disinfection system is failing and only one of the two units currently works. In 2009, the DEQ issued an AOC for a history of violations.

#### Technical Approach

The PER recommended a phased approach to the wastewater system improvements to allow the city time to secure the more than \$15 million required to completely upgrade the wastewater treatment and effluent management facilities. The first phase will focus on installing new UV disinfection equipment at the existing treatment facility and constructing a new effluent land application system. Deer Lodge has approached several area landowners regarding the land application system. To date, the most favorable discussions have been with the Montana State Prison. The prison currently land applies wastewater from its own seasonal wastewater storage facility and is familiar with applicable DEQ requirements. Deer Lodge proposes to develop a new land application site at this location. A subsequent project in 2014 will address the deficiencies of the wastewater treatment facility. The implementation schedule is reasonable and includes finalization of financing in September 2011, design in late 2011, and construction during summer 2012.



Specific tasks to be accomplished:

- Upsize existing land application pumps at wastewater treatment facility;
- Install new UV disinfection equipment at wastewater treatment facility;
- Install new lift station in collection system and new force main to convey effluent to new land application site;
- Install new center pivot(s) on approximately 200 acres; and
- Construct new 45 acre-feet operational storage basin (10 days of storage).

### Resource and Citizen Benefits Analysis

The project has quantifiable resource development and preservation benefits. Elimination of summertime discharges to the Clark Fork River will result in preservation of surface water quality as well as enhancement of the fisheries, wildlife habitat and public recreation associated with the river. The project will develop additional irrigated acres and develop a use for the wastewater effluent. The project is consistent with the Deer Lodge CIP and has been well supported through multiple letters from city residents.

### Project Management

The proposed project involves four funding agencies and will require a significant grant administration effort. Deer Lodge proposes to coordinate grant administration between a grant administrator and the engineer. The grant administrator will inform each funding agency of project progress. The project management plan outlines the duties for the mayor, engineer, attorney, bond counsel, clerk-treasurer, and grant administrator. The plan provides for a good staff of specialists to perform duties important to the project within their respective areas of expertise. Deer Lodge will continue to inform the public through regularly scheduled city council meetings and newspaper articles. The project management plan provides for contract management with regulatory and funding agencies, consultants, contractors, and other involved parties. Deer Lodge has allocated an adequate budget for grant administration. The project budget includes funding to support the financial and administrative aspects of the project.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$132,885	\$132,885
Professional & Technical	\$0	\$0	\$708,027	\$708,027
Construction	\$100,000	\$0	\$3,804,400	\$3,904,400
Total	\$100,000	\$0	\$4,645,312	\$4,745,312

The project budget is complete and includes adequate detail to show that the proposed budget is sufficient to complete the proposed project. Deer Lodge and the proposed project are eligible for all of the funding sources in the proposed funding strategy. If the city is successful with its funding applications, the entire funding package will be in place and the project will be ready to proceed. The applicant is a local government and has the ability to collect charges for debt and operation. The projected residential water and sewer rate is \$67.95 per month. This rate includes the debt service for this project and the O&M costs. This proposed rate is 119% of the DOC target rate which indicates the project is affordable for residents. Cost estimates were provided for the options considered for each of the project components and were used to help determine preferred alternatives. Cost estimates are reasonable and adequate.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term construction-related impacts will be controlled through permitting and proper construction practices. No significant environmental impacts were discovered in the analysis and the project will have a net positive impact on the environment through improved water quality in the Clark Fork River.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 4

<b>Applicant Name</b>	Fergus Conservation District	
<b>Project Name</b>	Big Spring Creek Stream Restoration at the Machler Conservation Easement	
<b>Amount Requested</b>	\$	100,000
<b>Other Funding Sources</b>	\$	100,000 Applicant
	\$	175,000 DEQ
	\$	150,000 FWP
	\$	100,000 TU
	\$	50,000 Orvis
	\$	200,000 International Malting Company
	\$	<u>260,000</u> NRCS
<b>Total Project Cost</b>	\$	1,135,000
<b>Amount Recommended</b>	\$	100,000

## Project Summary

### Project History

Big Spring Creek includes a meandering channel, associated secondary channels, and a partially vegetated riparian corridor. Major channel straightening and filling of former stream meanders were undertaken in the early 1960s. The channel shows evidence of incision, concrete riprap, and car bodies which were placed along the stream banks in order to control channel instability. Three quarters of the riparian area is degraded, has limited species diversity, and an active disconnection from the active floodplain. Other restoration activities and projects along the creek include the successful restoration of Brewery Flats (2000), Feasibility of Opening Big Spring Creek through downtown Lewistown (2003), the Mill Ditch fish passage assessment (2008), and the state acquisition of a conservation easement to provide for the Big Spring Creek Realignment and Recreational Trail. The applicant intends to increase and improve fish habitat by realigning the stream and creating a variety of quality habitat conditions, to maintain a continuous riparian corridor, to decrease sediment transport, and to improve floodplain functionality. The project also aims to increase recreational opportunities and public awareness.

### Technical Approach

The Fergus CD proposes to realign the Big Spring Creek channel on the 62-acre Machler conservation easement at the existing elevation. The applicant also considered no action and channel realignment at the historic elevations. Channel realignment at the existing elevation would have greater benefit to the channel, riparian habitat, fisheries improvements, and flood hazard issues. The applicant used the frame work from the adjacent project, Carter Ponds, for this project.



Specific tasks to be accomplished:

- Create eight to twelve acres of new floodplain along Big Spring Creek;
- Restore one mile of stream habitat; and
- Provide 0.8 miles of public trail.

### Resource and Citizen Benefits Analysis

This project has multiple renewable resource benefits. Channel realignment will increase stream length, reduce streambank erosion, and allow a functional floodplain and vegetated riparian corridor to develop along a reach of an important spring creek in Montana. The project will occur on a state-purchased conservation easement and be consistent with the goals of the easement. The project will develop 1,600 feet of stream and subsequent fish habitat which, in turn, will enhance the rainbow and brown trout fishery and support natural resource based recreation and education. The project also will provide for a healthy wetland ecosystem which will support a variety of bird species.

Economic development from this project would occur as the restored reach would directly increase angling opportunities. The increased fishing value over the 0.5 mile long project area would be about \$60,000 per year. Public support of this project has been strong and has been received through public meetings and comment periods.

### Project Management

The proposed management plan is adequate. The Fergus CD will manage and administer the grant, with major assistance from FWP. The project management plan should be revised, based on the RRGL guidelines. The application specified an incorrect reimbursement process.

The project is in the planning phase. The Fergus CD intends to complete the project within the next two years. Implementation will include public involvement at each appropriate step in the project. The Fergus CD will develop a MOU with FWP. The application did not include a copy of the MOU. Contracting for professional services will comply with applicable state procurement laws.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$10,000	\$0	\$17,500	\$27,500
Professional & Technical	\$40,000	\$0	\$60,000	\$100,000
Construction	\$50,000	\$0	\$957,500	\$1,007,500
Total	\$100,000	\$0	\$1,035,000	\$1,135,000

The Fergus CD stated that the budget estimates were based on 2003 costs and, therefore, were underestimated. Costs for permits were not provided although permits were identified. The application included appropriate budget documentation for each phase of the project. The Fergus CD identified other funding sources. Of those, \$300,000 has been awarded and already used on the project. The remainder has not yet been committed.

### Environmental Evaluation

The project will have an overall positive impact on soil, water, and vegetation resources in the watershed. Negative environmental impacts will largely be short term and related to construction activities; however, these impacts will be mitigated through local, state, and federal permits to protect the resource.

### Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## **Project No. 5**

<b>Applicant Name</b>	Montana Department of Natural Resources and Conservation		
	Trust Land Management Division		
<b>Project Name</b>	Smith Lake Dam Rehabilitation		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$	50,000	FWP Community Pond Program
<b>Total Project Cost</b>	\$	150,000	
<b>Amount Recommended</b>	\$	100,000	

## **Project Summary**

### **Project History**

Smith Lake Dam is located approximately six miles north of Whitefish, in Flathead County. The dam was constructed in the late 1930s. The resulting reservoir provided a research and fish rearing facility for the Montana Fish and Game Department, now named the FWP. The DNRC Dam Safety Program has classified the dam as high hazard because, if a breach were to occur when the reservoir was full, a paved county road and at least one residential property would be inundated. The dam is an earthen structure that is 11 feet high and about 180 feet long, with a crest width that varies from three to six feet. Because of structural deficiencies with the dam, DNRC has ordered the reservoir to be drained to its natural level, leaving a five acre pond that cannot support a viable fishery and that may go dry in some years. This project is proposed to bring the dam into compliance with safety requirements and, thereby, allow the refilling of Smith Lake.

### **Technical Approach**

DNRC proposes to contract with an engineer for the design of a replacement spillway; the reshaping and armoring of the embankment; and, the removal of a deteriorated concrete diversion structure that is no longer in use. Additionally, the project will improve an existing road and a trail will be constructed to allow access, including handicap access, to the dam from the road. Work will be publicly advertised and competitively bid. DNRC will award a contract for construction to a responsive contractor.

Specific tasks to be accomplished:

- Replace the existing spillway with a primary spillway capable of handling the 100-year storm event;
- Reshape the existing embankment to lines and grades established in plans approved by DNRC Dam Safety;
- Riprap the embankment to prevent erosion;
- Remove a deteriorated concrete diversion structure at the inlet to the reservoir; and
- Provide access via an improved road and a foot trail to the reservoir and reconstructed dam.

## **Resource and Citizen Benefits Analysis**

This project will benefit several resources, including the water quality of Whitefish Lake, a westslope cutthroat trout fishery, an existing infrastructure that provides a public benefit, habitat for fish and wildlife including wetlands and nesting habitat and, public recreation. Because Smith Lake Dam is located only a few miles from the City of Whitefish, it is anticipated that Smith Lake, if allowed to fill, will provide a family-friendly mountain lake that offers recreational benefits, including trout fishing.

The purpose of the project is to bring Smith Lake Dam into compliance with dam safety requirements, thus allowing for the lake to fill and support the re-establishment of cutthroat trout. This action will develop and subsequently preserve a fishery, provide recreational opportunities, provide habitat for fish the common loon, bald eagle, fisher, mink, and belted kingfisher. Additionally, some flood control and the

prevention of a dam breach will result from the project, thus protecting the waters of Whitefish Lake from sediment associated with erosion.

The dam is located within the Whitefish neighborhood plan Area on Montana trust lands. The goal of this program is to provide increased revenue for the beneficiaries of the school trusts, while maintaining the economic, environmental, recreational, and cultural vitality of Whitefish and the surrounding area. The project is well supported by the local community, local leaders, and FWP.

### **Project Management**

The DNRC TLMD will manage this project. Engineering oversight during design and construction will be performed by DNRC WRD engineers. The public has been kept informed during the planning stages of the project and will be kept informed as the project is further developed, designed, and constructed. Final design of the project is scheduled for 2011. Construction is scheduled during late summer and fall 2012.

### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$2,500	<b>\$2,500</b>
Professional & Technical	\$ 2,000	\$0	\$26,000	<b>\$28,000</b>
Construction	\$ 98,000	\$0	\$21,500	<b>\$119,500</b>
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$50,000</b>	<b>\$150,000</b>

In addition to the requested RRGL grant, the budget for the proposed project includes a \$50,000 grant through the FWP Community Pond Program. Although not included in the budget, DNRC also proposes to furnish riprap for the project and to rough in a trail from the access road to the dam.

### **Environmental Evaluation**

Other than typical temporary impacts during construction, the environmental impacts associated with this project are beneficial. Long-term impacts include the enhancement of an existing infrastructure that would enable the development and preservation of fish and wildlife habitat, recreation, surface water quality, and, a viable cutthroat trout fishery. New construction would be designed in accordance with public safety requirements. Thus, a high hazard dam would be rehabilitated to protect downstream property during periods of high runoff, including the 100-year storm event.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.



## **Project No. 6**

<b>Applicant Name</b>	Culbertson, Town of		
<b>Project Name</b>	Wastewater System Improvements		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$	625,000	TSEP
	\$	36,200	Applicant
		<u>\$2,316,200</u>	RD Loan
<b>Total Project Cost</b>		\$3,077,400	
<b>Amount Recommended</b>	\$	100,000	

### **Project Summary**

#### **Project History**

The Culbertson wastewater system serves 716 persons in 295 households. The system is comprised of a VCP gravity collection system, central lift station, and two-cell facultative lagoon. The lagoon was originally constructed in 1945 and one more cell was added in 1977. The lift station was replaced in 1987.

The DEQ inspected the wastewater system in 2004 and noted several deficiencies. Those included excessive sewage sludge accumulations, deteriorated dikes, significant lift station deterioration, lack of emergency power, and overflows. The town performed video inspections of its collection system in 1993 and discovered numerous faults including root penetration, cracks, and holes.

#### **Technical Approach**

Culbertson considered three alternatives to address the treatment/disposal deficiencies and one alternative each for the lift station and collection system deficiencies. Culbertson proposes to address all of the identified deficiencies by replacing the central lift station, replacing almost 3,500 feet of VCP collection pipe with PVC, rehabilitate the lagoon treatment system, remove and land apply accumulated sludge, and install a spray irrigation system for disposal of treated effluent.

Specific tasks to be accomplished:

- Replace the existing lift station;
- Replace 3,500 lineal feet of deteriorated sewer;
- Reconstruct a 3-cell facultative lagoon system;
- Land apply 51,000 cubic yards of sludge; and,
- Install spray irrigation system for 28-acre application site.

### **Resource and Citizen Benefits Analysis**

The primary natural resource benefits include preservation of the groundwater aquifer through elimination of leaky sewer mains and lagoons; development of 28 acres of irrigated land; conservation of energy with more efficient use of variable-frequency drives for raw sewage pumping; and, management of irrigated acreage and the treated effluent for use as an irrigation source. Secondary resource benefits include improvement of groundwater quality and reduced chemical use in farming practices. The project is multi-purpose with wastewater disposal and irrigated crop production, enhanced economic development, and community growth potential.

### **Project Management**

The project management plan is thorough and well-structured. There is a reasonable system of check and balances to control the flow of funds to and from the applicant and to its consultants. Staff requirements/responsibilities, procurement requirements, coordination, public involvement, and consultant management are all reasonably addressed. All critical project implementation duties have been adequately assigned to competent personnel. The applicant has included a reasonable strategy for

managing its consultants and contractors and has provided a thorough education program to advise the public on project status.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$72,100	\$72,100
Professional & Technical	\$0	\$0	\$360,600	\$360,600
Construction	\$100,000	\$0	\$2,544,700	\$2,644,700
Total	\$100,000	\$0	\$2,977,400	\$3,077,400

With the anticipated funding package of TSEP, DNRC, RD loan and local reserves, the proposed sewer rate will be 125% of the calculated target rate, which appears to be affordable to town residents. All 295 households will be affected by the sewer rate increase. The funding package appears reasonable and the town's candidacy for the TSEP and RRGL grants and RD loan programs is confirmed. Without the \$100,000 DNRC RRGL grant, it is likely that the town could increase its RD loan amount, or qualify for a moderate RD grant. Cost estimates for the recommended solution are reasonable and well described.

### Environmental Evaluation

The overall long-term environmental impacts are expected to be positive. The project will reduce the discharge of raw wastewater from the broken sewer mains into the groundwater. The project is expected to result in energy savings with the installation of more efficient VFD on lift station pumps. Some short-term, construction-related impacts can be expected, but it is anticipated that they will be minimized and mitigated to the greatest extent possible.

### Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 7

Applicant Name	Upper and Lower River Road Water and Sewer District		
Project Name	Water Distribution and Wastewater Collection, Phase 4		
Amount Requested	\$	100,000	
Other Funding Sources	\$	291,000	WRDA
	\$	332,000	CDBG
	\$	500,000	TSEP
	\$	400,000	SRF
Total Project Cost		\$2,076,000	
Amount Recommended	\$	100,000	

### Project Summary

#### Project History

The ULRRWSD is located immediately southwest of the City of Great Falls, adjacent to the Missouri River. The district was formed in the late 1990s to address a number of public health and safety issues associated with failing wastewater systems and poor drinking water quality in the area. The district prepared a PER in 2002 which evaluated several alternatives to address deficiencies with the wastewater and drinking water systems within the district. The preferred alternative selected in the PER involved construction of a centralized wastewater collection and water distribution system which would be connected to the Great Falls infrastructure. The district has phased the project in order to make it



affordable for residents. Three phases of the project have been successfully completed to date, extending service to nearly 300 households. The phase 4 project will serve an additional 54 households within the district. The proposed project will eliminate pollution of groundwater caused by failing drainfield systems. The project also conserves and manages surface water resources with the installation of water meters at each household.

### Technical Approach

The decision to connect the district water and wastewater systems to Great Falls was made in 2002 and supported with the PER that was prepared at the time. The district prepared a supplement to the PER in April 2010. The PER supplement evaluated different service area alternatives for a phase 4 project, with consideration for technical feasibility, public health and safety; environmental impacts, public acceptance, and financial feasibility. The proposed project is financially feasible and addresses the most significant remaining public health and safety issues. The PER supplement recommends construction to extend water and sewer to 54 households within the district. The implementation schedule is reasonable and includes finalization of financing in October 2011, design in late 2011, and construction during summer 2012.

Specific tasks to be accomplished:

- Construct approximately 4,500 feet of water main and accessories to provide water service to 54 households;
- Construct approximately 2,600 feet of sewer main and accessories to provide sewer service to 54 households; and
- Install water meters at 54 households.

### **Resource and Citizen Benefits Analysis**

The project has quantifiable resource conservation, management and preservation benefits. The project includes the installation of water meters which will result in overall conservation and better management of surface water from the Great Falls water plant. The project will eliminate failing on-site wastewater systems which will help preserve the water quality within the local groundwater resource. The project is consistent with the Cascade County and Great Falls Growth Policies and well supported through multiple letters from residents in the district. Currently, there is a moratorium on the construction of new residential units within the district due to failing on-site wastewater systems and poor water quality. Connection to the Great Falls water and sewer should spur more residential construction within the district.

### **Project Management**

The proposed project involves six funding agencies and will require a significant grant administration effort. The district proposes to coordinate grant administration between the district secretary and engineer. The engineer will be responsible to inform each funding agency of project progress. The project management plan outlines the duties for the district secretary, engineer, attorney, bond counsel, clerk-treasurer, district board. This provides for a good staff of specialists to perform duties important to the project within their respective areas of expertise. The district will continue to inform the public through regularly scheduled board meetings and newsletters. The project management plan provides for contract management with regulatory and funding agencies, consultants, contractors, and other involved parties. The district has allocated an adequate budget for grant administration of the project. The project budget includes funding to support the financial and administrative aspects of the project.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$110,000	\$110,000
Professional & Technical	\$50,000	\$0	\$164,000	\$214,000
Construction	\$50,000	\$0	\$1,702,000	\$1,752,000
Total	\$100,000	\$0	\$1,976,000	\$2,076,000

The project budget is complete and includes adequate detail to show that the proposed budget is sufficient to complete the proposed project. The district and the proposed project are eligible for all of the funding sources in the proposed funding strategy. If the district is successful with its funding applications, the entire funding package will be in place and the project will be ready to proceed. The applicant is a local government and has the ability to collect charges for debt and operation. The projected residential water and sewer rate is \$79.98 per month. This rate includes the debt service for this project and the O&M costs. The new rate will affect 54 households. This proposed rate is 124% of the DOC target rate, which indicates the project is affordable for residents. Cost estimates were provided for the options considered for each of the project components and were used to help determine preferred alternatives. Cost estimates are reasonable and adequate.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term construction-related impacts will be controlled through permitting and proper construction practices. No significant environmental impacts were discovered in the analysis and the project will have a net positive impact on the environment through the elimination of failing on-site wastewater systems within the proposed project area.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 8

<b>Applicant Name</b>	Beaverhead Conservation District/Beaverhead Watershed Committee		
<b>Project Name</b>	Poindexter Slough Fishery Enhancement		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$	7,455	Applicant
	\$	100,000	FWP Future Fisheries Program
	\$	30,000	USFWS North American Wetlands Conservation
	\$	15,000	USFWS Partners for Fish and Wildlife
	\$	15,000	Jackson Hole One-Fly Foundation
	\$	30,000	EPA 5 Star Restoration Program
	\$	10,000	TU Embrace a Stream
	\$	26,645	Orvis Conservation Grant Program
<b>Total Project Cost</b>	\$	334,100	
<b>Amount Recommended</b>	\$	100,000	

## Project Summary

### Project History

Poindexter Slough is a spring-fed tributary of the Beaverhead River near Dillon. The lower 3.2 miles are owned by FWP and the upper 1.5 miles are on private land. Poindexter Slough is likely a historic channel

of the Beaverhead River and is connected to the river by an irrigation diversion that provides water for the Dillon Canal Company, whose head gate is located on Poindexter Slough. Several years of drought have resulted in significant reductions in the water levels, increased sediment deposition, increased water temperatures, and general habitat loss. Trout numbers in Poindexter Slough have declined markedly in the last several years. A decline in resident and non-resident angler use has followed the decline in the trout population. This project would preserve agricultural water uses, provide a minimum instream flow of 58 cfs in Poindexter Slough, and develop the opportunity to divert flushing flows from the Beaverhead River into Poindexter Slough in the spring, when water is available.

### Technical Approach

The applicant proposes to combine mechanical channel enhancement with flow augmentation from the Beaverhead River. The applicant also considered no-action, flow augmentation only, and mechanical channel enhancement only. The preferred alternative has the greatest potential to achieve the project goals. FWP has an instream flow reservation in the Beaverhead River. The most important component of this project would be the use of that reservation to divert water into Poindexter Slough and then back into the river. The project will benefit the trout fishery of Poindexter Slough and the agricultural Dillon Canal Company water users. The design and construction are scheduled to begin in spring 2011 and be completed by spring 2012.

Specific tasks to be accomplished:

- Investigate supplemental flows;
- Design the irrigation related structures and instream related improvements;
- Prepare bid specifications;
- Secure permits;
- Complete construction; and
- Conduct post-project monitoring and maintenance.

### **Resource and Citizen Benefits Analysis**

The project will allow FWP to manage the Beaverhead River instream flow reservation to maintain a minimum instream flow of 58 cfs for Poindexter Slough and provide the opportunity to divert flushing flows through Poindexter Slough when water is available to do so. This project will restore trout habitat in Poindexter Slough which, in turn, will increase the trout population, restore spawning habitat in Poindexter Slough for Beaverhead River trout, and increase recreational fishing opportunities in Poindexter Slough.

The project will either modify the existing Beaverhead River diversion structure or install a new head gate in Poindexter Slough. This improvement will preserve the irrigated acres served by the Dillon Canal Company.

Spring Creek fishing opportunities are highly valued by fly fishermen and Poindexter Slough is one of the few spring creeks in Montana located primarily on public land. The successful completion of this project will result in significant increases in resident and non-resident angler use which will provide economic stimulus to the Dillon area. Several individuals, agencies, and organizations submitted letters of support for this project.

### **Project Management**

The BWC will manage the project and has experience in managing other RRGL projects. BWC will follow state procurement guidelines for engaging contractors. BWC meets monthly, advertises its meetings, and encourages public involvement. Prior to submitting the application, BWC presented the PER and the four alternatives at a monthly meeting and participants provided input and suggestions.



## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$10,000	\$0	\$1,500	\$11,500
Professional & Technical	\$50,000	\$0	\$24,848	\$74,848
Construction	\$40,000	\$0	\$207,752	\$247,752
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$234,100</b>	<b>\$334,100</b>

The construction costs were estimated based on similar work in the area. Most of the funding for this project would be the RRGL and Future Fisheries programs. FWP awarded only \$25,000 of the \$100,000 request during June 2010 funding cycle but encouraged BWC to apply again in 2011. If the BWC does not receive all of the grant requests, the scope of the mechanical stream restoration budget will be reduced.

## Environmental Evaluation

Mechanical removal of sediment and construction of stream banks and pool habitat will cause short-term increases in turbidity. This impact will be disclosed in the permitting process. The long-term environmental impacts will be positive.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 9

**Applicant Name** Pondera County Canal and Reservoir Company  
**Project Name** C-Canal Rehabilitation

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 26,481 Applicant  
**Total Project Cost** \$ 126,481

**Amount Recommended** \$ 100,000

## Project Summary

### Project History

The Pondera County Canal and Reservoir Company has identified a 2,024-foot section of the C-Canal with extreme seepage loss. Based on canal flow measurement in 2009, the seepage loss through this section of the C-Canal was estimated at 0.5 cfs, or 37,200,000 gallons over an entire irrigation season. This loss of water has, at times, resulted in the inability of the company to meet down-gradient irrigation demands. In addition, seepage from the canal has resulted in saline seep problems on 12 acres of land and roadbed saturation on a gravel road running along the down slope bank of the canal.

### Technical Approach

The company proposes to install a Canal<sup>3</sup> geomembrane liner in the leaking section of the C-Canal. The company also evaluated the use of a chemical sealant, a shotcrete liner, and a different flexible geomembrane liner. Use of the Canal<sup>3</sup> geomembrane would provide the highest level of seepage control at the least installation cost. Total costs for each of the other options would be less than costs for the proposal. All construction work is anticipated to be completed by May 2012.

Specific tasks to be accomplished:

- Remove all vegetation and other organic material from the canal section;
- Reshape the canal section to the required dimensions; and
- Install the Canal<sup>3</sup> geomembrane liner.

### Resource and Citizen Benefits Analysis

The proposed project will minimize water loss due to canal seepage from the C-Canal. Eliminating this seepage will conserve up to an estimated 0.5 cfs presently being lost to canal seepage. Minimizing the quantity of water lost to canal seepage will allow delivery of more water to down-gradient water users and, perhaps, leaving more water left in Lake Francis.

A more dependable supply of irrigation water will allow down-gradient landowners to improve their existing irrigation water management and should result in higher crop yields. More water left in Lake Francis will provide for more fishing and other water based recreation opportunities. Minimizing canal seepage will also reduce saline seep problems on adjacent ground and reduce an existing problem with roadbed saturation on a gravel road located next to the canal.

The Marias River Watershed Alliance, the Liberty, Toole, and Hill County CD's, and the Montana Salinity Control Association submitted letters of support for this project.

### Project Management

The proposed project management appears reasonable, complete, and easily implementable.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$1,500	\$0	\$5,500	\$7,000
Professional & Technical	\$23,000	\$0	\$2,450	\$25,450
Construction	\$75,500	\$0	\$18,531	\$94,031
Total	\$100,000	\$0	\$26,481	\$126,481

All costs appear to be project costs. Matching funds for management and construction are in the form of in-kind services and are presumed to be secure. No increase in the existing assessment of \$17.75 per acre is projected. In total 80,400 acres are presently served by the irrigation company. There is no plan to expand the district as part of this project.

### Environmental Evaluation

Short-term construction impacts will be limited to small areas and will be relatively brief in duration. Long-term environmental impacts are positive in terms of water conservation and more efficient irrigation water delivery.

### Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.



## **Project No. 10**

**Applicant Name** Buffalo Rapids Irrigation Project District 1  
**Project Name** Lateral 26.4 Conversion

<b>Amount Requested</b>	\$ 100,000	
<b>Other Funding Sources</b>	\$ 113,376	NRCS EQIP
	\$ 95,628	Applicant
<b>Total Project Cost</b>	\$ 309,004	
<b>Amount Recommended</b>	\$ 100,000	

### **Project Summary**

#### **Project History**

BRIP proposes to convert Lateral 26.4 from open ditch to a pipeline with a new lateral route and to install an additional pump site. The canal is in poor condition and exhibits substantial seepage losses. Seepage loss and low pressure head at the end of the system result in insufficient water supply to 620 acres of irrigated land. The Lateral 26.4 is calculated to lose 2,946 acre-feet of water per irrigation season. The desired outcome of this project is water conservation, water quality, preservation and increased irrigation efficiency. The conversion from open ditch to pipeline will improve delivery efficiency of up to 90%. The increased delivery efficiencies will result in increased water levels that will enable the development of existing acres that currently cannot be irrigated.

#### **Technical Approach**

The applicant considered a no action alternative, the preferred alternative, a pipeline conversion within the existing ditch alignment, and rehabilitation and installation of a geomembrane canal liner with the current canal alignment. The preferred alternative, as described in the PER and the application will reroute a portion of the canal, install a pipeline throughout the entire 2.3 mile canal system and the addition of a pump site. This alternative was selected based on effective seepage control, water conservation, water management, and overall cost. Project completion is estimated to be June 2013.

Specific tasks to be accomplished:

- BRIP will contract with a licensed professional engineer to develop the final canal route, pipeline design and pump site;
- The contracted engineer will complete and submit permit applications to all required regulatory compliance agencies;
- The contractor will provide construction oversight for the construction of the new route, the new pump site, and installation of the pipeline;
- BRIP will work with the engineer to ensure that all issues with installation have been addressed;
- The engineer will develop a set of as-built plans to document any changes made in the field; and
- BRIP will work with the engineer to assure that proper documentation has been submitted and the grant will be closed out.

### **Resource and Citizen Benefits Analysis**

The primary renewable resource benefit associated with this project is resource management. Re-routing the delivery system and installing a pipeline and pump site will allow an improved operational head at the end of the system and provide more efficient water management and use. An estimated 2,946 acre-feet of water will be conserved and will be available in the canal system for further development. The proposed improvements will help the BRIP eliminate seepage loss, improve water quality in the Yellowstone River, improve project water management, and increase crop yields.

## Project Management

A significant portion of the project management tasks will be assumed by the BRIP. BRIP will manage the project and administer the grant. The BRIP will coordinate with the NRCS to assure that cooperation, coordination, and communication remain intact during the design, construction, and closeout phases. A local attorney will be contracted to provide legal assistance, if necessary. The contracted engineer will review material and equipment specifications to ensure that the quoted products meet the design specification.

The majority of activities will be coordinated between the BRIP, the contracted engineer, and the NRCS. The contracted engineer will provide construction oversight and BRIP members will work closely with the inspector.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$6,455	\$6,455
Professional & Technical	\$0	\$0	\$37,282	\$37,282
Construction	\$100,000	\$0	\$165,267	\$265,267
Total	\$100,000	\$0	\$209,004	\$309,004

Based on the cost estimates provided in the application, the budget appears to be sufficient to fund the proposed project. Unit costs used in the development of the estimates of construction are based on historic data for similar work and are reasonable. Specific, reasonable costs were provided for each alternative considered. The application justifies the proposed action as the most cost-effective approach.

Water users purchase water from the BRIP at a cost of \$37.50 per acre. In total, approximately 620 acres are under irrigation. This project should not result in an assessment increase. Matching funds for this project are in-kind but are uncommitted.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no significant adverse long-term impact will result. Minimal short-term environmental concerns associated with construction will be averted using best management practices.

## Funding Recommendation

The DNRC recommends grand funding of \$100,000 upon development and approval of the final scope of work, administration, budget and funding package.

## Project No. 11

<b>Applicant Name</b>	Pondera County Conservation District		
<b>Project Name</b>	Wasteway Rehabilitation and Water Quality Improvement		
<b>Amount Requested</b>	\$ 100,000		
<b>Other Funding Sources</b>	\$ 74,195	Pondera Canal and Reservoir Company	
<b>Total Project Cost</b>	\$ 174,195		
<b>Amount Recommended</b>	\$ 100,000		

### **Project Summary**

#### Project History

The high level of waste water flows that are lost at the lower end of the PCCRC ditches is causing severe erosion problems and silt flowing into the Marias River. Construction of a storage reservoir on the E Canal wasteway will capture otherwise lost flows for the irrigation of existing agricultural fields and the improvement of water quality in the Marias River.

#### Technical Approach

The applicant considered no action and six potential storage sites on various wasteways within the PCCRC boundaries as alternatives for solving the problem of lost flows and soil erosion. All of the proposed storage sites would benefit the project and reduce erosion and subsequent silt washing into the Marias River. Five storage options were rejected based on construction costs, low storage volumes, or both.

The project schedule appears to be reasonable. Design and product procurement are scheduled from August 2011 through March 2012. Project construction will occur during post-irrigation season, 2012. This construction timing is due to the in-kind contributions of equipment and staff for this project.

Specific tasks to be accomplished:

- Engineering design and survey work for selected site including construction permits;
- Final design of reservoir, outlet and spillway;
- Procuring gate and spillway components and other pipe material;
- Construct earth embankment dam with standpipe principle spillway and earthen emergency spillway; and
- Test project components and put into use.

### **Resource and Citizen Benefits Analysis**

The construction of the storage reservoir will conserve irrigation water that is currently being lost to the system. This wasteway improvement project will indirectly create long term, full time employment and economic development due to increased on-farm efficiency and crop production on existing irrigated acres. Direct benefits to adjacent landowners and indirect benefits to all irrigators within the PCCRC service area will be apparent by increased crop yields, without the diversion of additional water from Lake Frances.

There is considerable public support for this project. Private individuals, a bank and a credit union, the City of Conrad, and businesses in the area have all expressed support this project. The project will result in increased crop production, increased earnings, and increased revenues for north-central Montana.

Construction of this project will create new fish habitat. The water quality of the mainstem of the Marias River downstream of the Dry Fork of the Marias River will benefit due to decreased sediment and nutrient loads in surplus water within the wasteway. Wildlife and waterfowl will benefit from new water storage, as

demonstrated at other wasteway reservoir projects in the area. The production of wetlands and riparian areas has resulted from the construction of these off-stream reservoirs.

### **Project Management**

The proposed management plan is adequate. The PCCRC has experience with similar projects. The Pondera County CD will administer the grant and PCCRC will manage the project. The planning and construction schedules are reasonable and consistent with the anticipated completion by February 2012. Engineering for the project will be contracted out, but the actual construction will be performed by PCCRC personnel and equipment.

### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$4,500	\$0	\$4,500	\$9,000
Professional & Technical	\$15,500	\$0	\$5,500	\$21,000
Construction	\$80,000	\$0	\$64,195	\$144,195
Total	\$100,000	\$0	\$73,695	\$174,195

The scope and budget for the project are based on the financial capabilities of PCCRC and the adjacent land owners to the proposed impoundment. Funding includes in-kind cash and in-kind services from the PCCRC and private land owners. They have already committed \$20,000 to the project. The PCCRC will also provide an estimated \$54,195 of in-kind services, mostly through the construction of the project. All future operations and maintenance costs will be the responsibility of the adjacent landowner.

### **Environmental Evaluation**

The construction of this off-stream reservoir to capture water that otherwise would be lost to the system will benefit the environment by reducing water diversions from Lake Frances, thus reducing the mud flats exposed during peak irrigation periods. The amount of sediment load carried to the Marias River will be reduced because wasteway water flows from the lower canal will be captured and reused, rather than flowing through the highly erodible soils.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.



## Project No. 12

**Applicant Name** Flathead County  
**Project Name** Bigfork Stormwater System Improvements

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 150,000 319 Grant  
\$ 13,000 Applicant  
\$ 783,500 RSID  
**Total Project Cost** \$1,046,500

**Amount Recommended** \$ 100,000

### **Project Summary**

#### Project History

Flathead County is requesting support for an urban stormwater improvement project in the community of Bigfork. Stormwater discharges directly into Bigfork Bay and the Swan River with minimal or no effluent treatment. Pollutant levels in Flathead Lake are rising due to significant increases in development and population. This project addresses infrastructure needs through installation of effective stormwater conveyance and filtration systems, thereby reducing contaminants and water quality degradation in Flathead Lake. Flathead Lake is listed as an A-1 water body and is on the 303 (d) list of impaired waters in Montana. A TMDL and Nutrient Management Plan have been completed. Lake waters were identified as not fully supporting aquatic life as a result of nutrients, suspended solids, and siltation. Flathead Lake is a barometer of the ecological health of the entire Flathead watershed.

#### Technical Approach

The project application contained two technical documents, each prepared by a different consultant. The two approaches lacked conformity. Although very good technical documentation regarding the problem was provided, the overall plan to address the problem was vague in specifics regarding system location, treatment type, costs, and environmental impacts. The applicant suggested that further refinement of the design would be forthcoming. An alternative analysis with comparison of the net present worth of the project components was not included in the technical approach documentation.

The project will begin design in the 4<sup>th</sup> quarter 2011. The work is scheduled for completion in the 3<sup>rd</sup> quarter 2012. This schedule is reasonable.

Specific tasks to be accomplished:

- Stormwater collection structures and conveyance piping; and
- Stormwater treatment to be provided with commercial treatment units, underground facilities and low impact development.

### **Resource and Citizen Benefits Analysis**

Stormwater treatment facilities will help the county to better manage stormwater runoff in the Bigfork community by reducing flooding and erosion. Controlled conveyance and treatment will also allow protection of high quality waters found in Bigfork Bay on Flathead Lake. Measureable reduction in nutrients, sediment, and other pollutant loads should be accomplished. Public health will also be protected by the reduction in the discharge of bacteria into the lake, a highly utilized recreational water body. The project is a component of an on-going plan to protect receiving waters in the Flathead basin through the reduction of nutrient loads. The local economy is based on the enjoyment of the natural water, forestlands, and mountain resources in the area. The proposed project will serve to help protect water resources, thereby benefitting the local economy.



The project is a part of an on-going stormwater system improvements project, with the first phase currently in design. The application documented a very active public involvement program which included several public meetings, newsletters, and general information. Many letters of support were provided.

### **Project Management**

An adequate project management plan was provided. The application discussed procurement procedures and on-going public involvement. Flathead County has staff to manage the project during implementation and provide for the operations and maintenance of the new facilities.

### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$ 18,000	<b>\$18,000</b>
Professional & Technical	\$ 16,000	\$0	\$126,500	<b>\$142,500</b>
Construction	\$ 84,000	\$0	\$801,500	<b>\$885,500</b>
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$946,500</b>	<b>\$1,046,500</b>

The funding strategy proposed for the project, primarily based on a county stormwater RSID, is sound. The project also includes funding from other sources but does not require large grant contributions from those. The work will be the second phase of an on-going plan and the county has experience developing workable financial plans. The costs are reasonable, but more detail regarding estimated construction costs is needed. Rates and charges to support the financial plan for the project are reasonable. Because most of the project relies on local debt secured with an RSID, a detailed backup plan is not critical to the success of the project. Loss of grant funds would reduce project scope.

### **Environmental Evaluation**

Specific project components and location were not well defined. Consequently, it was difficult to assess specific environmental impacts associated with the installation of the new storm drainage improvements. Upon completion, measurable improvements to water quality in Flathead Lake should be obtainable.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon completion of a new alternative analysis that includes a net present worth comparison and development and approval of the final scope of work, administration, budget, and funding package.

### **Project No. 13**

**Applicant Name** Hebgen Lake Estates County Water and Sewer District  
**Project Name** Wastewater System Improvements

**Amount Requested** \$ 100,000  
\$ 557,448 SRF  
\$ 100,000 WRDA  
\$ 720,000 TSEP  
**Total Project Cost** \$1,477,448

**Amount Recommended** \$ 100,000

### **Project Summary**

#### **Project History**

The existing Hebgen Lake Estates wastewater system was constructed in 1975 and consists of an aerated lagoon for treatment and infiltration/percolation (I/P) ponds for disposal of the treated wastewater to groundwater. The aerated lagoon leaks at a rate of 17 inches per year, causing groundwater contamination and contributing to nutrient loading in nearby Hebgen Lake. Elevated nitrate levels have been detected in monitoring wells placed around the lagoons and I/P ponds. Samples from one of the monitoring wells have exceeded the nitrate groundwater quality standard of 10 mg/l. The district is currently under a DEQ Administrative AOC to correct deficiencies in the system. The AOC requires the district to obtain a discharge permit and complete modifications to the system by October 31, 2012 to bring the system back into compliance. Other issues with the existing system include an aging sewage lift station and lack of a functioning backup generator.

#### **Technical Approach**

The district evaluated numerous alternatives including connecting to West Yellowstone, mechanical treatment, storage and land application (sprinkler irrigation), and new lagoons. The district proposes a new Level 2 treatment system, consisting of two septic tanks (30,000 and 25,000 gallons), a 27,000 gallon recirculation tank, Advantex treatment pods, and 11,400 feet of drainfield. The new system will provide better treatment, reduce nitrates in the discharge by 60%, and provide for better mixing and dilution with the groundwater. The Level 2 system was selected because it was the lowest cost alternative and because of its ability to reduce nitrate contamination. Storage and land application are not feasible because there is no available land for an irrigation site. Connection to West Yellowstone would be costly and the West Yellowstone wastewater system lacks the necessary capacity. The proposed project is technically feasible.

The selected alternative will bring the district back into compliance with the Montana Water Quality Act, reduce impacts to groundwater and surface water, and meet the requirements of the AOC. The project is scheduled to start construction in the second quarter 2012 and be complete by the end of 2012.

Specific tasks to be accomplished:

- Replace the existing wastewater system with a new Level 2 treatment system and drainfield;
- Replace the existing lift station with a new submersible lift station; and
- Remove and dispose the sludge from the existing lagoon.

### **Resource and Citizen Benefits Analysis**

The proposed project will conserve a significant amount of electrical energy because it will eliminate three 7.5 horsepower blowers when the aerated lagoon is decommissioned. The project will preserve the quality of the area groundwater by eliminating the leakage from the existing sewage lagoons and by improving the quality of the treated wastewater effluent. Surface water quality and fish habitat will be

indirectly preserved as a result of improved groundwater quality, a portion of which enters Hebgen Lake. The benefit to the water quality of the lake will be limited due to dilution and the small volume of the discharge.

Completion of the project will allow construction on existing residential and commercial lots within the district to resume which will provide an economic benefit to the area. The project is coordinated with the Gallatin County Growth policy. Several public meetings were held to discuss the project and members of the public submitted 20 letters in support of the project. The project is multi-purpose, benefiting surface water, groundwater and fisheries. The project will be used by the public, has co-funding from non-state funds, promotes growth, and protects public health and safety.

### **Project Management**

The project management plan is adequate. The project management team consists of the president of the district board, the secretary-treasurer of the board, legal counsel for the district, and the district engineers. The district has selected an engineer and will contract with the firm for the project design and construction administration. The engineer will also assist with funding administration. The district must obtain funding and complete design of the improvements before the project can proceed to construction. Construction is scheduled to be completed by the end of 2012. The district will encourage the public to attend the open district board meetings. During construction, the district will notify residents prior to interruption of service. The project will be bid and the construction contractor will be selected in accordance with funding agency requirements.

### **Financial Assessment**

<b>Budget Item</b>	<b>RRGL Grant</b>	<b>RRGL Loan</b>	<b>Match</b>	<b>Total</b>
<b>Administration</b>	\$0	\$0	\$88,548	<b>\$88,548</b>
<b>Professional &amp; Technical</b>	\$0	\$0	\$219,000	<b>\$219,000</b>
<b>Construction</b>	\$100,000	\$0	\$1,069,900	<b>\$1,169,900</b>
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$1,377,448</b>	<b>\$1,477,448</b>

The district plans to fund the project with the RRGL, TSEP, and WRDA grants and with an SRF loan. The project budget and funding strategy are reasonable. The district has submitted applications for the grants but none of the funding had been secured at the time of this application. The project is on the SRF IUP. The district has indicated that it will comply with the AOC and will borrow the necessary funds if the grants are not received. The district currently serves 192 lots. Monthly wastewater user rates will increase from \$58.76 to \$88.72 as a result of the project. The current water system monthly user rate is \$23.06.

### **Environmental Evaluation**

The project will not cause significant environmental impacts. Overall, the project will benefit the environment by improving surface and groundwater quality.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.



## **Project No. 14**

**Applicant Name** Harlem, City of  
**Project Name** Wastewater System Improvements Project

<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 750,000 TSEP
	\$ 450,000 CDGB
	\$ 189,000 Federal Appropriation
	\$ 600,000 RD Grant
	<u>\$ 812,000</u> RD Loan
	\$2,901,000

**Amount Recommended** \$ 100,000

### **Project Summary**

#### **Project History**

The Harlem wastewater treatment facility, constructed in 1949, consists of a three-cell aerated lagoon facility with two settling cells. The collection system consists of gravity mains with two lift stations to transfer flows to the treatment lagoons. The collection system has adequate capacity. The lift stations do not meet current safety and electrical standards. The treatment facility discharges to the Milk River. The system has a record of discharge permit violations and Harlem is under a DEQ enforcement action to take corrective action and comply with the discharge permit.

#### **Technical Approach**

A PER was completed in 2010 to address the deficiencies in the wastewater system. The PER recommended constructing three new aerated treatment lagoons and replacing the Milk River discharge with storage lagoons and agricultural irrigation. The recommendation includes installation of disinfection facilities to treat effluent prior to irrigation. The PER also recommended updating both lift stations.

The applicant proposes to include pretreatment (micro strainer and bar screen) prior to the aerated treatment lagoons, although pretreatment is not required by DEQ Circular 2, "Design Standards for Wastewater Facilities." The applicant proposes to provide a three-cell aerated lagoon system, with a total HRT of 60 days, although the DEQ Circular 2 standards require only 15 days of HRT for aerated treatment when storage and irrigation are used for effluent disposal. The applicant proposes to provide a storage lagoon which has 4.2 million gallons more capacity than the EPA and DEQ standards require. Finally, the applicant proposes to provide disinfection of effluent, prior to the storage cell. The standards require disinfection immediately prior to irrigation application of effluent. The UV system plan can be modified to incorporate the UV system in the irrigation piping system. The UV system must be pressurized and will have to operate at the irrigation system pump rate. These technical design issues significantly affect the overall project cost and also result in additional costs to operate and maintain the pretreatment and additional aeration units.

Specific tasks to be accomplished:

- Upgrade existing lift stations;
- Construct new three cell aerated lagoon system;
- Install new UV disinfection equipment at wastewater treatment facility;
- Construct new storage lagoon; and
- Install new linear move irrigation unit to irrigate 23 acres.

## Resource and Citizen Benefits Analysis

The project has quantifiable conservation, management, development, and preservation benefits. Twenty-three acres will be irrigated with effluent, allowing a comparable volume of water to remain in the Milk River. The project will develop additional irrigated acres and develop a use for the wastewater effluent. Irrigation with effluent will advance farming practices and reduce the use of chemical fertilizers. The project will eliminate effluent discharge to the Milk River, thereby resulting in improved surface water quality and enhancement of the fisheries and recreation associated with the river. Harlem received 22 letters of support from government agencies and from businesses in the area.

## Project Management

The proposed project involves four funding agencies and will require a significant grant administration effort. Harlem proposes to coordinate grant administration between a grant administrator and the engineer. The grant administrator will inform each funding agency of project progress. The project management plan outlines the duties for the mayor, engineer, attorney, bond counsel, clerk-treasurer, and grant administrator. The plan provides for a good staff of specialists to perform duties important to the project within their respective areas of expertise. Harlem will continue to inform the public through regularly scheduled council meetings and newspaper articles. The project management plan provides for contract management with regulatory and funding agencies, consultants, contractors, and other involved parties. Harlem has allocated an adequate budget for grant administration of the project. The project budget includes funding to support the financial and administrative aspects of the project.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$110,000	\$110,000
Professional & Technical	\$40,000	\$0	\$346,000	\$386,000
Construction	\$60,000	\$0	\$2,345,000	\$2,405,000
Total	\$100,000	\$0	\$2,801,000	\$2,901,000

The project budget is complete and includes adequate detail to show that the proposed budget is sufficient to complete the proposed project. Harlem and the proposed project are eligible for all of the funding sources in the proposed funding strategy. The city is not eligible for a \$750,000 hardship level TSEP grant. The program manager reported that Harlem is eligible for a maximum grant of \$625,000. If the city is successful with its funding applications, the funding package will be \$125,000 short of the applicant's projected budget and the project may not be ready to proceed. The applicant is a local government and has the ability to collect charges for debt and operation. The projected residential sewer rate is \$30.32 per month. This rate includes the debt service for this project and the O&M costs. This proposed rate, combined with the current water rate, is 143% of the DOC target rate, which indicates the project is affordable for residents. Cost estimates were provided for the options considered for each of the project components and were used to help determine preferred alternatives.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term construction-related impacts will be controlled through permitting and proper construction practices. No significant environmental impacts were discovered in the analysis and the project will have a net positive impact on the environment through improved water quality in the Milk River.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.



## Project No. 15

<b>Applicant Name</b>	Polson, City of		
<b>Project Name</b>	Water System Improvements		
<b>Amount Requested</b>	\$ 100,000		
<b>Other Funding Sources</b>	\$1,689,500	SRF	
	<u>\$ 625,000</u>	TSEP	
<b>Total Project Cost</b>	\$2,414,500		
<b>Amount Recommended</b>	\$ 100,000		

### **Project Summary**

#### Project History

The Polson water system consists of seven groundwater wells, seven water storage reservoirs, and more than 280,000 feet of distribution piping. The water system users are all metered. The original city water supply was a surface water source obtained from Hell Roaring Creek. This source was eventually replaced in the 1990s with the existing well system due to bacterial contamination. Polson expects to experience a water shortage within the next five years during periods of high demands, the summer irrigation season. Currently, the water distribution system cannot provide required fire flows to the downtown commercial district. The distribution system also leaks. Distribution improvements need to be undertaken to transfer water available in the Skyline storage tanks to the upper west side of the city where the high school, hospital and nursing home are located.

#### Technical Approach

Polson proposes to develop a new well and improve the storage and distribution system improvements to improve fire protection. The city evaluated new wells at two different locations and development of a surface water supply at either Hell Roaring Creek or Flathead Lake as alternatives for increasing the water supply. The city also evaluated and prioritized various distribution system improvements. The proposed improvements will develop a new groundwater supply, conserve groundwater by replacing leaking mains, prevent future water shortages, improve fire protection, and improve the ability of the city to manage its water system. The city will conserve energy by installing energy efficient pumps and components. The project is scheduled to begin construction in the second quarter 2012 and be complete by the end of the year.

Specific tasks to be accomplished:

- Construct a new 400 gpm well;
- Recoat the interior of the Skyline storage tank;
- Upgrade and loop mains in the downtown commercial district; and
- Construct an east-west transfer main in the high school and hospital area to provide additional storage for fire protection (connect the Skyline tanks to the Woodbine tank).

### **Resource and Citizen Benefits Analysis**

This project will conserve an estimated 10,000 gallons of groundwater per day by replacing leaking distribution mains. Reducing friction losses in the distribution system will conserve electrical energy. The city will develop a new 400 gpm groundwater well to increase the water supply. The city will install the east-west transfer main and a flow meter on the new well to more efficiently manage the water system.

Completion of the project will increase the capacity of the water supply and allow continued growth in the community, including the downtown commercial district. The project will be coordinated with the upcoming CIP and a DOT TIGER grant. The TIGER grant funds will pay for street restoration after the

east-west transfer main is installed. Polson held a public hearing to discuss the project and 47 members of the public submitted letters of support.

### **Project Management**

The project management plan is adequate. The management team consists of the mayor and city council, city manager, the city clerk, the city public works director, and the city engineers. The city will contract with an engineer and a grants administrator for the design, construction administration and funding administration of the project. The city clerk will administer financial matters and perform general administration and record keeping. The public works director will be responsible for technical oversight and coordination with the engineer. Polson must first obtain funding and complete design before proceeding to construction. Construction is scheduled to begin in the second quarter 2012 and be completed by the end of the year. The city will inform the public through city council meetings, newspaper articles and door hangers.

### **Financial Assessment**

<b>Budget Item</b>	<b>RRGL Grant</b>	<b>RRGL Loan</b>	<b>Match</b>	<b>Total</b>
<b>Administration</b>	\$0	\$0	\$161,000	<b>\$161,000</b>
<b>Professional &amp; Technical</b>	\$0	\$0	\$331,000	<b>\$331,000</b>
<b>Construction</b>	\$100,000	\$0	\$1,822,500	<b>\$1,922,500</b>
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$2,314,500</b>	<b>\$2,414,500</b>

The city plans to fund the project with the RRGL and TSEP grants and an SRF loan. The project budget and funding strategy are reasonable. Polson has submitted applications to the DNRC and the DOC. The SRF application will be completed in May 2011, after notice of TSEP and RRGL grant awards. None of the funding had been secured at the time of this application. The city has indicated that if the full grant funding is not awarded, the city might increase the loan amount, delete components of the project, and/or apply for a CDBG grant. The current population of Polson is estimated to be 5,546. Monthly water user rates will increase from \$26.11 to \$30.28 as a result of the project. The current wastewater system monthly user rate is \$28.75.

### **Environmental Evaluation**

The majority of the project will be constructed within existing streets and on city property. The project will not cause significant environmental impacts.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## **Project No. 16**

**Applicant Name** Amsterdam-Churchill Sewer District No. 307  
**Project Name** Wastewater System Improvements

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 750,000 TSEP  
\$2,859,000 SRF  
**Total Project Cost** \$3,708,778

**Amount Recommended** \$ 100,000

### **Project Summary**

#### **Project History**

The Amsterdam-Churchill Sewer District serves 927 people in 335 households. The facility includes a two-cell facultative lagoon and storage pond for spray irrigation with a design capacity of 78,000 gpd. The facility currently receives 85,000 to 90,000 gpd. Measurements show that the treatment lagoons are leaking 85,000 gpd of poorly-treated wastewater into the groundwater aquifer.

The DEQ issued an administrative compliance order (ACO) in 2009. The ACO requires the District to monitor flow, draft a wastewater PER by April 2010, complete a design by October 2011, apply for a Montana Pollutant Discharge Elimination System permit by January 2012, and complete construction of a compliant facility by December 2012.

#### **Technical Approach**

The applicant evaluated a no action and several alternatives to the proposed action. Several alternatives were not feasible. The PER included a thorough cost analyses of the capital requirements, the costs for O&M, salvage, and net present worth. The proposed project will replace the existing facultative lagoon with a partially-mixed aerated lagoon, storage cells, ultra-violet disinfection, and effluent reuse through spray irrigation on crops.

Specific tasks to be accomplished:

- Remove & dispose of accumulated biosolids from existing treatment facility;
- Upgrade lift station at treatment facility;
- Replace leaking facultative lagoon with two-cell, partially-mixed, membrane-lined aerated lagoon – expandable to 3 cells;
- Construct new blower building for equipment, lab;
- Install UV disinfection equipment;
- Replace storage cell with new lined storage cell – expandable to two cells; and
- Add 80 to 100 acres of irrigated farmland.

### **Resource and Citizen Benefits Analysis**

The project will preserve the aquifer quality through the elimination of the discharge of poorly treated wastewater, development and the management and development of new irrigated acreage. Secondary benefits include improvement of groundwater quality, reduction in fertilizer needs through utilization of nutrients in the treated wastewater, preservation of family farmland, reduced public health risk, and enhanced opportunities for community growth. The project is also considered “multi-use” because it provides for wastewater treatment/disposal as well as irrigated crop production.

## Project Management

All critical project implementation duties have been adequately assigned to competent personnel. The applicant has included a reasonable strategy for managing its consultants and contractors. The applicant also provided a thorough education program to advise the public on project status.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$329,449	\$329,449
Professional & Technical	\$40,000	\$0	\$451,000	\$491,000
Construction	\$60,000	\$0	\$2,828,329	\$2,888,329
Total	\$100,000	\$0	\$3,608,778	\$3,708,778

All budget components are reasonable and well supported. The proposed sewer rate is 257% of target rate. Sixty-seven percent of the community is low and middle income. Even though there are concerns for the affordability of the proposed rate, 32 residents signed the support petition.

## Environmental Evaluation

The proposed project will not result in adverse environmental impacts except for reasonably expected temporary construction impacts. Of the alternatives considered, the project will result in the least adverse environmental impact. Overall environmental impacts are expected to be positive.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 17

**Applicant Name** Stanford, Town of  
**Project Name** Water System Improvements

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 25,450 Applicant  
\$ 55,200 Inter-cap Loan  
\$ 82,878 SRF  
\$ 5,000 TSEP  
**Total Project Cost** \$ 268,528

**Amount Recommended** \$ 100,000

## Project Summary

### Project History

Since 1928, the Town of Stanford has drilled 13 wells in an effort to supply the town with adequate water. Twelve of the wells were drilled into the Colorado formation, an aquifer that is subject to decreasing well yields over time due to bentonite, mineral encrustation, and bio-fouling. Currently, only four of those wells are in use. An artesian well, drilled 1,030 feet into the Kootenai formation in 1952, is also operable, but the water quality is very poor, with high iron, manganese, and carbon dioxide levels and has experienced reduced yields. This well is currently off line due to poor water quality, but is available for emergency use.



Two of the four wells currently operating were drilled in 2004 and yields from both are declining. Stanford is facing a water shortage that will worsen with time. The town currently rations water during the summer months. The goal of this project is to expand the Stanford water supply by at least 60 gpm.

#### Technical Approach

Stanford proposes a two step approach for this project. The first step is to rehabilitate three existing wells using air bursting technology. The artesian well will also be investigated and the air bursting technology will be used, if appropriate. The resulting increase in well yields and the results of the artesian well will be evaluated to determine the most advantageous method of obtaining the remaining needed water capacity. The second step of the project will be either to install a treatment system for the rehabilitated artesian well or to drill a new well to increase the water supply. Periodic rehabilitation with air bursting to restore well yields is an anticipated future maintenance expense. The project also includes 23 water meters. The water system will be fully metered after all meters have been installed. The project design is expected to be complete in August 2011, with construction complete in spring 2012.

Specific tasks to be accomplished:

- Rehabilitate three existing wells using air bursting technology;
- Investigate and possibly rehabilitate an existing artesian well;
- Install 23 water meters; and
- Install a water treatment for existing artesian well or drill a new well, pending results of the artesian well investigation.

#### **Resource and Citizen Benefits Analysis**

The project requires the rehabilitation of several existing wells and, possibly, the drilling of a new well to increase the Stanford water system supply by 60 gpm. The installation of water meters will encourage water conservation and improve the ability to manage the water system. Thus, the project will conserve ground water. The rehabilitation of the wells will also increase efficiency and, thereby, conserve energy.

The project will be used by the public, and implements a project previously planned in a CIP.

#### **Project Management**

Stanford has recent experience in the management of large infrastructure projects. The project management plan is adequate, and the project can easily be implemented in the next two years. The town will continue to inform the public about the project status through newspaper articles and town council meetings as the project progresses.

#### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$52,285	<b>\$52,285</b>
Professional & Technical	\$0	\$0	\$30,447	<b>\$30,447</b>
Construction	\$100,000	\$0	\$85,796	<b>\$185,796</b>
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$168,528</b>	<b>\$268,528</b>

This project will be completed in two steps. The first step will be funded through an InterCap loan. This loan may be rolled into the SRF loan at the completion of the project, depending on the amount of budget remaining.

The budget is uncertain because the requirements for step two are not yet defined. The budget includes the costs to install treatment equipment for the artesian well, the most expensive component in step two. The budget is reasonable and Stanford expects the availability of all proposed matching fund sources.

## Environmental Evaluation

The project will result in minor, short-term dust and noise disturbances during construction. Long-term project benefits include improved community water supply and enhanced fire protection.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 18

<b>Applicant Name</b>	Montana Fish, Wildlife and Parks
<b>Project Name</b>	Chadbourne Diversion Dam Repair and Selective Fish Passage Retrofits
<b>Amount Requested</b>	\$ 99,500
<b>Other Funding Sources</b>	\$ 100,004 Applicant
	\$ 99,506 USFWS
	\$ 51,146 Jackson Hole One-Fly or Bring Back the Natives
	\$ 9,861 TU
<b>Total Project Cost</b>	\$ 360,017
<b>Amount Recommended</b>	\$ 99,500

## Project Summary

### Project History

The Chadbourne diversion is a concrete structure spanning the Shields River about 14 miles above the confluence with the Yellowstone River. It supplies irrigation water to about 2,500 acres via the Lower Shields River Canal. The dam has blocked most upstream migration of fish since its construction in 1930. The barrier has also been instrumental in maintaining Yellowstone cutthroat trout genetic purity above the dam because it blocks most upstream migration by rainbow trout that might breed with Yellowstone cutthroat trout. Prior engineering assessments suggested that the Chadbourne Diversion is beginning to fail, presenting an opportunity to cooperatively restore it, while meeting future fisheries management objectives. The goals of this project are to protect Yellowstone cutthroat trout in the Shields River watershed, preserve existing agricultural uses, and allow selective passage of native fishes to promote restoration of migratory life-history strategies in the basin.

### Technical Approach

FWP proposes to evaluate, design and construct a long-term engineering solution to a downstream scour hole that threatens the diversion structure; reconstruct or repair the right wall of the head gate structure; and, select and construct a fish ladder that would allow selective passage of native fishes. FWP also considered the no action alternative and the construction of a separate structure to prevent upstream migration of rainbow trout while allowing selective passage of native fishes. No action would ultimately result in failure of the diversion structure. Construction of a separate structure would have a greater long term cost. The preferred alternative will preserve the irrigation diversion and the associated irrigated acres and the Yellowstone cutthroat trout population in the Shield River drainage. Design of the sluiceway retrofit to prevent upstream passage of rainbow trout at high flows, while allowing the downstream passage of woody debris, will be the biggest challenge. The project is scheduled to begin in May 2011 and be completed by December 2011.

Specific tasks to be accomplished:

- Design an engineered solution to the downstream scour hole;
- Design repairs to damaged head gate;
- Design a retrofit to prevent passage of rainbow trout at the sluiceway while allowing passage of high water debris;
- Design a selective passage fish ladder; and
- Develop engineer's cost estimate to construct these components;

### Resource and Citizen Benefits Analysis

Some conservation organizations have suggested USFWS should list Yellowstone cutthroat trout under the ESA. This basin-level project will assist Montana in retaining management authority for the species. Preservation of the nearly genetically pure Yellowstone cutthroat trout in the Shields River basin also will support angling opportunities for this sought after fish. Physically linking this basin with the Yellowstone River will result in additional recruitment of Yellowstone cutthroat trout to the Yellowstone River, which will enhance the Yellowstone River fishery.

This project is part of the on-going Montana Yellowstone cutthroat trout conservation planning efforts. The project is also part of the Yellowstone cutthroat trout conservation strategy for the Shields River watershed that involves agencies, irrigators, and the Shields Valley Watershed Group. The project is multi-purpose, benefitting agricultural water users and the Yellowstone cutthroat trout population in the basin. The Lower Shields River Canal Co., Park County CD, USFS, USFWS, and TU submitted letters of support for this project.

### Project Management

FWP staff in the Design and Construction Bureau will oversee procurement of a design consultant, assist with design review, and coordinate construction administration. State procurement procedures will be used to hire consultants and contractors. Several state and federal agencies will be involved with the project, either in funding or permitting. FWP will follow EPA requirements for public involvement after developing a preferred alternative for construction.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$0	\$0
Professional & Technical	\$81,100	\$0	\$15,050	\$96,150
Construction	\$18,400	\$0	\$244,708	\$263,867
Total	\$99,500	\$0	\$260,517	\$360,017

The construction cost estimates appear to be well thought out. The funding package for this project includes the RRGL grant, and contributions the FWP Future Fisheries Program, USFWS, the Jackson Hole One Fly or Bring Back the Natives, and TU. The USFWS contribution is committed.

### Environmental Evaluation

This project integrates the needs of water users with fish conservation. The project benefits fish and agriculture by taking advantage of the existing structure to meet project objectives. Construction activities may cause some short-term turbidity, but the long term environmental effects are positive.

### Funding Recommendation

The DNRC recommends grant funding of \$99,500 upon development and approval of the final scope of work, administration, budget, and funding package.



## **Project No. 19**

**Applicant Name** Helena Valley Irrigation District  
**Project Name** Pump No. 2 Rehabilitation

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 138,350 Applicant  
**Total Project Cost** \$ 238,350

**Amount Recommended** \$ 100,000

### **Project Summary**

#### **Project History**

A pumping plant located at Canyon Ferry Dam supplies Missouri River water to the HVID. Two large hydraulic turbine pumps are used to lift water from the dam up to a canal that feeds the Helena Valley regulating reservoir. These turbines have been in service since 1959. Pump No. 1 was rehabilitated in the 1990's. Pump No. 2 must be taken off line several days each irrigation season for stop-gap repairs to the intermediate packing sleeve. Major long-term failure of this pump would have a significant impact on the capability of the district to meet irrigation demands and also to provide water for the City of Helena municipal water system and other users.

#### **Technical Approach**

The district proposes a full rehabilitation of Pump No. 2. This proposal is based on an evaluation of both partial and full rehabilitation of the pump, the successful rehabilitation of Pump No. 1, and a favorable cost benefits analysis. Full rehabilitation of the pump will include replacement of wear rings and operational plumbing, modifications to the wicket gate, and repair of the pump packing sleeve, turbine packing sleeve, and guide bearings. Costs for the other alternatives would be less than the proposal, but those options would not provide the same level of benefits as the proposal. All work on the pump is anticipated to be completed by October 2012.

Specific tasks to be accomplished:

- Replace the pump wear rings and operational plumbing;
- Complete modifications to the pump wicket gate;
- Fabricate and repair the pump packing sleeve;
- Repair the turbine packing sleeve and guide bearings;
- Remove and abate existing lead paint on operation plumbing; and
- Paint the new operational plumbing.

### **Resource and Citizen Benefits Analysis**

Rehabilitation of Pump No. 2 will allow the district to continue to provide water to irrigated lands within the district and to provide water to the City of Helena. This project will help to maintain the fishery and other recreation uses at the Helena Valley regulating reservoir. The project is necessary to maintain an instream flow augmentation project on Prickly Pear Creek and an artificial wetlands project administered by the Lewis and Clark County Water Quality District. The project also will allow the continued use of an alternative energy-powered pumping system by the district.

This project will continue to allow the productive use of over 17,000 acres of farmland in the Helena Valley. The project will also ensure the continued delivery of over 11,000 acre-feet of water to the City of Helena that is not only needed to meet the peak summer time water usage, but is also critical to the continued economic development of the city.

District members, the City of Helena, FWP, and the DOI submitted letters of support for this project.



## Project Management

The proposed project management appears reasonable, complete, and easily implementable.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$6,450	\$6,450
Professional & Technical	\$31,240	\$0	\$5,450	\$36,690
Construction	\$68,760	\$0	\$126,450	\$195,210
Total	\$100,000	\$0	\$138,350	\$238,350

All costs appear to be project costs. Matching funds for management and construction are in the form of in-kind services and presumed to be secure. No increase in the existing assessment of \$17.96 per acre is anticipated. In total 17,600 acres are presently served by the irrigation district. There is no plan to expand the district as part of this project.

## Environmental Evaluation

Short-term construction impacts will be limited to small areas and will be relatively brief in duration. Long-term environmental impacts are positive in terms of water conservation and more efficient irrigation water delivery.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## Project No. 20

Applicant Name	Belt, Town of
Project Name	Water System Improvements
Amount Requested	\$ 100,000
Other Funding Sources	\$ 500,000 TSEP
	\$ 258,000 CDBG
	\$ 192,000 SRF
Total Project Cost	\$1,050,000
Amount Recommended	\$ 100,000

## Project Summary

### Project History

The public water system that serves Belt was constructed about 90 years ago. Initially, the system consisted of groundwater distributed through a network of 2.5-inch steel pipes. Now, the system includes two storage reservoirs and upsized piping. The sources of water are two wells, each approximately 400 feet deep. The wells draw water from the Madison formation. This project proposes to replace the oldest of the storage reservoirs, a 183,000-gallon concrete tank that was constructed in about 1940. The tank is badly deteriorated, leaks, and is the suspected cause of seven total coliform bacteria violations during the last 10 years. In addition, the proposed project includes a telemetry system to coordinate pump operation with storage tank water levels and water meters at all service connections to better manage and conserve water.

## Technical Approach

In 2009, Belt contracted with an engineering firm to analyze its water system and prepare a PER that prioritizes needed improvements and determines preferred alternatives for upgrades to the system. The PER determined that replacement of the oldest of Belt's two water storage reservoirs was the highest priority. The PER recommended, as a high priority, the installation of a telemetry system to remotely control pumping operations and coordinate pumping with water levels in each of the two storage tanks. The PER also recommended the installation of water meters at all service connections to better manage the system and to encourage the conservative use of water. A subsequent phase of work, the schedule for which has not been established, will include a leak detection survey and the replacement of distribution lines, as necessary. The newer of the two existing storage tanks will likely require replacement in 10 to 20 years. Design of the project is planned for 2011. Construction should occur during the spring and early summer 2012.

Specific tasks to be accomplished:

- Replace the existing 183,000-gallon concrete storage reservoir with a 180,000-gallon glass lined steel tank at approximately the same elevation;
- Install a telemetry system to automate and provide efficiency in pumping and storage operations; and
- Install water meters at all service connections.

## **Resource and Citizen Benefits Analysis**

This project is a groundwater conservation project. Due to deterioration, groundwater that has been pumped and stored is being lost from a concrete storage tank that has exceeded its useful life. Additionally, the installation of water meters will encourage water conservation by reducing water use. At present, water use is nearly three times that desired for residential consumption.

During the last ten years, Belt has experienced total coliform violations seven times. The source of contamination is likely stagnation and the introduction of pollutants at the leaking storage reservoir that is proposed for replacement as part of this project. The replacement of the tank with a new steel reservoir will eliminate the source of contamination and will provide resulting public health benefits. The project has been presented to the public and is well supported, as evidenced by letters of support submitted with the grant application.

## **Project Management**

Management of this project will be the responsibility of Belt, an incorporated town with a mayor, town council, and clerk/treasurer. In cooperation with the clerk, a grant administrator is proposed to coordinate with the various funding programs and to manage the finances associated with this project. Public meetings were held during the preliminary and developmental stages of the project. The community and its engineer are committed to ongoing public outreach during the design and eventual construction phases of the project.

## **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$73,230	\$73,230
Professional & Technical	\$0	\$0	\$121,000	\$121,000
Construction	\$100,000	\$0	\$755,770	\$855,770
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$950,000</b>	<b>\$1,050,000</b>

In addition to the RRGL grant requested in this application, Belt is applying for an additional \$758,000 in grants through the TSEP and the CDBG programs. The town also proposes to borrow \$192,000 through the Drinking Water SRF Loan Program. Residential water and sewer rates are currently \$26.15 and

\$24.00 per month, respectively. The debt service associated with this project will increase the water rate by \$4.85 per month for each of the 273 water system hookups, 258 of which are residential.

### **Environmental Evaluation**

The adverse impacts associated with this project are temporary and are associated with construction activities. Avoidance or mitigation will be practiced to the greatest extent possible to minimize impacts to the community during construction. The positive benefits include the conservation of a groundwater resource, energy savings associated with an efficient telemetry system, and public health benefits associated with the elimination of total coliform bacteria in the public water supply.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### **Project No. 21**

<b>Applicant Name</b>	Sun Prairie Village County Water and Sewer District		
<b>Project Name</b>	Water System Improvements		
<b>Amount Requested</b>	\$ 100,000		
<b>Other Funding Sources</b>	\$1,320,550	RD Loan	
	\$1,080,450	RD Grant	
	\$ 625,000	TSEP	
	<u>\$ 450,000</u>	CDBG	
<b>Total Project Cost</b>	\$3,576,000		
<b>Amount Recommended</b>	\$ 100,000		

### **Project Summary**

#### **Project History**

The Sun Prairie Village County WSD obtains its water supply from four wells located near the Sun River, approximately 1.5 miles southeast of the district. The wells intercept a pre-glacial aquifer, at a depth of about 200 feet. The district leases the well field property from a private landowner. The lease expires on December 31, 2021. The landowner has no interest in either extending the lease beyond that date or selling the property once the lease expires. Thus, the district will lose its only water supply after 2021. The primary goal of the project is to construct a new long-term reliable water supply to replace the existing wells. The proposed project addresses conservation, management and development of groundwater, along with conservation of energy.

#### **Technical Approach**

The applicant provided a detailed evaluation of several alternatives for a new water supply, water treatment, storage improvements and water meter installation. Water supply alternatives included installing four new 200-foot wells into the pre-glacial alluvial aquifer; installing four new 1,000-foot wells into the Madison aquifer; connecting to Great Falls, Vaughn, and Sun Prairie Estates water systems; and developing a new surface water source from the Sun River. Water treatment alternatives included no treatment, electrodialysis, nanofiltration, reverse osmosis (RO), and pretreatment. Storage improvement alternatives included no action, expanding the existing steel tank and adding a backup generator, and installing a backup generator near the existing concrete tank. Water meter alternatives included no action, visual read meters on all connections, touch read meters on all connections, and radio read meters on all connections.



The applicant proposes to drill four pre-glacial alluvial groundwater wells in a county park located within the district boundaries and a new shorter transmission main to connect the wells to the distribution system. A new RO treatment plant will be installed at the well field to provide treatment for sulfate, manganese, sodium, hardness, and radon. A new backup generator will be installed at the storage tank for the well pumps, distribution pumps, and RO plant resulting in improved fire protection and uninterrupted water treatment in the event of a power outage. Further, the district will install new system-wide radio-read water meters. The project is scheduled to begin construction in March 2012 and be complete by the end of the year.

Specific tasks to be accomplished:

- Construct four new groundwater wells in a County park located within the district's boundaries;
- Construct a new RO WTP at the new well field;
- Construct a new transmission main from the new wells to the storage tank and distribution system;
- Install a new backup generator at the storage tank for the well pumps, distribution system pumps and RO plant; and
- Install system-wide radio-read water meters.

### Resource and Citizen Benefits Analysis

The proposed project includes resource conservation, resource development and resource management benefits. The installation of system-wide water meters will result in the conservation of groundwater due to lower per capita usage. The installation of meters consistently reduces water usage as a result of monthly water bills being proportional to the amount of water used. Development of a groundwater resource will be realized by installing four replacement groundwater wells for the district's water supply. The target yield for each well will be 150 to 200 gpm. The target groundwater resource for the proposed wells is the pre-glacial alluvial aquifer, with each well being drilled to an approximate depth of 200 feet. The installation of a new telemetry system, a backup generator, and water meters will provide management benefits to the groundwater resource by allowing the operators to more efficiently operate and manage the overall water system.

The project will be coordinated with the CIP for the district and the Cascade County growth policy. The project appears to have strong public support. The district held five public hearings to present and discuss the proposed project and grant applications. The average attendance at the public meetings was approximately 20 residents. The application included six letters of support specifically for the proposed project.

### Project Management

The project management plan is adequate. Experienced staffing, professionals and consultants will manage the project. The will inform and involve the public through open district board meetings and notifications throughout construction. The application included a thorough discussion of contract management. The project will be ready for implementation in the next two years.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$121,500	\$121,500
Professional & Technical	\$0	\$0	\$567,000	\$567,000
Construction	\$100,000	\$0	\$2,787,500	\$2,887,500
Total	\$100,000	\$0	\$3,476,000	\$3,576,000

The district plans to fund the project with the RRGL, RD, TSEP and CDBG grants and with an RD loan. The project budget and funding strategy are reasonable. Although none of the matching sources have yet been secured, the grant application indicates that the district has discussed the funding package with



all of the listed funding agencies. The grant application discussed provisions for either applying for STAG/WRDA funds or reapplying for additional funding in the next cycle, if a source, or sources, of funding is not obtained. The water system currently serves 489 residential users and one commercial user. The current population of the district is estimated to be approximately 1,400. Monthly water user rates will increase from \$35.44 to \$69.09 as a result of the project. The current wastewater system monthly user rate is \$33.56.

### **Environmental Evaluation**

Other than short-term construction related impacts, this project will not cause significant environmental impacts. The grant application included a completed uniform environmental checklist.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### **Project No. 22**

<b>Applicant Name</b>	Fort Belknap Indian Community
<b>Project Name</b>	Fort Belknap Indian Community Water Conservation

<b>Amount Requested</b>	\$ 100,000	
<b>Other Funding Sources</b>	\$ 7,300	Applicant
	<u>\$ 140,668</u>	BIA
<b>Total Project Cost</b>	\$ 247,968	

<b>Amount Recommended</b>	\$ 100,000
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### **Project Summary**

#### **Project History**

The Fort Belknap Indian Community proposes to rehabilitate the Main Canal C within the FBIP. This project includes relocating a 2,700 foot section of Main Canal C and installing a canal liner. Significant erosion has occurred due to seepage at the toe of Main Canal C. The proposed project will institute stabilization measures to re-establish a stable river bank on the affected portion of the Milk River. The main goals of this project are the conservation of water, the preservation of the Milk River river bank, the return to production of ten acres of land adjacent to the seepage site, and increased system efficiency for the FBIP.

#### **Technical Approach**

The applicant considered a no action alternative, the preferred alternative, a pipeline conversion within the existing ditch alignment, and relocating the canal without liner or pipeline installation. The preferred alternative, as described in the PER and the application will relocate the 2,700 foot section of Main Canal C that threatens to collapse into the Milk River and install a canal liner on the new portion. This alternative was selected based on effective seepage control, water conservation, water management, and overall cost. Project completion is estimated to be June 2012.

Specific tasks to be accomplished:

- FBIP will contract with a licensed professional engineer to develop the final rehabilitation design and assist with construction management and obtain the required permits and ensure that the project meets all regulatory requirements;
- The contractor will relocate and prepare the Main Canal C by removing organic material and shaping the canal to desire measurements;
- The contractor will install the liner in accordance with the manufacturer's recommendations, under the guidance of the engineer;
- FBIP will work with the engineer to ensure that all installation issues have been addressed;
- The engineer will develop a set of as-built plans to document any changes in the field; and
- FBIP will work with the engineer to assure that proper documentation has been submitted and the grant will be closed out.

### Resource and Citizen Benefits Analysis

The primary renewable resource benefit associated with this project is resource management. Moving the canal and lining the new portion will allow improved operational head at the end of the system and provide more efficient water management and use. An estimated 1,089 acre-feet of water will be conserved and will be available in the canal system for further development. A stable river bank will be re-established for a portion Milk River which is being severely eroded.

### Project Management

FBIP will manage the project. The contracted engineering firm will administer the grant, provide engineering services, and inspect construction. The BIA will also assist with grant administration and construction and installation services. A local attorney will be contracted to provide legal assistance, if necessary. The contracted engineer will review material and equipment specifications to ensure that the quoted products meet the design specification.

The majority of activities will be coordinated between the FBIP, the contracted engineer and the selected contractor. The contracted engineer will provide construction oversight and the contractor will work closely with the inspector.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$7,300	<b>\$7,300</b>
Professional & Technical	\$0	\$0	\$39,618	<b>\$39,618</b>
Construction	\$100,000	\$0	\$101,050	<b>\$201,050</b>
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$147,968</b>	<b>\$247,968</b>

Based on the cost estimates provided in the application, the budget appears to be sufficient to fund the proposed project. Unit costs used to estimate construction costs are based on historic data for similar work and are reasonable. Specific, reasonable costs were provided for each alternative considered. The application justifies the proposed action as the most cost-effective approach.

Water users purchase water from the FBIP at cost of \$14.75 per acre. In total, approximately 9,000 acres are under irrigation. This project should not result in an increased assessment. Matching funds for this project are in the form of in-kind and are secured.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no significant adverse long-term impact will result. Minimal short-term environmental concerns associated with construction of the new canal and installation of the liner will be averted using best management practices.

## Funding Recommendation

The DNRC recommends grand funding of \$100,000 upon development and approval of the final scope of work, administration, budget and funding package.

### Project No. 23

<b>Applicant Name</b>	Sweet Grass County Conservation District		
<b>Project Name</b>	Big Timber Creek Channel Stabilization		
<b>Amount Requested</b>	\$	99,998	
<b>Other Funding Sources</b>	\$	1,200	Applicant
	\$	8,250	Sweet Grass County
	\$	<u>5,250</u>	BTC SCWG
<b>Total Project Cost</b>	\$	114,698	
<b>Amount Recommended</b>	\$	99,998	

## Project Summary

### Project History

High water flow is scouring a new cutoff channel across three existing meanders on the BTC. The cutoff channel would isolate two headgates from the creek and would eliminate approximately 4,000 feet of stream channel through a mature cottonwood gallery. The new flow path would cause significant erosion and overtopping onto Swamp Creek Road. Preventing the formation of a new cutoff channel was ranked as the highest priority in the BTC–Swamp Creek Watershed Plan. Stabilization of the three-quarter mile stretch of BTC upgradient of Swamp Creek Road was also identified as a high priority project per the *BTC and Swamp Creek Reconnaissance Stream Corridor Assessment* report. Excessive fines in gravels were found in the aggraded reach within this project reach and reported in *Assessment of Factors Limiting Fisheries of the BTC Watershed*, a study completed by TU.

### Technical Approach

SGCCD proposes to construct a buried revetment/flood control berm to prevent high water flows from scouring a new cutoff channel on BTC. The SGCCD also considered no action, deepening the existing channel, and constructing an overflow channel. The proposed revetment is the least expensive option that would accomplish the project goals. The option to deepen the channel was rejected because of the level of disturbance to the stream during construction, the potential to decrease bank stability and the potential for excessive maintenance. The overflow channel option was rejected due to the disturbance to the existing cottonwood gallery, the potential to increase deposition and the high cost for the construction of a second bridge.

Alternatives were weighed based on cost analysis, environmental checklists, and the ability to meet project goals. The report did not assess alternatives to improve Swamp Creek Road, which is likely the root cause of the channel instability. The report included a second phase that would improve bank stability and would replace a failed headgate. Funding mechanisms for the second phase of the project, and the ability to meet project goals without phase 2 were not highlighted in the proposal. The project schedule will be initiated and completed in 2011.



Specific tasks to be accomplished:

- Contract for project design and oversight;
- Complete the engineering analysis and Design;
- Contract for construction;
- Secure permits; and
- Construct 1,250 feet of buried revetment and flood control berm.

### Resource and Citizen Benefits

The proposed project would preserve surface water, fisheries, recreation, and irrigated acres. Surface water quality will be preserved by preventing headcutting, thereby also preventing sediment generation and reducing sediment load to the creek and by maintaining flow through a mature cottonwood gallery. Approximately 4,000 feet of fisheries would be maintained and enhanced by stabilizing the banks and preventing further erosion. Recreation would be maintained through the continued use of Swamp Creek Road access to the Crazy Mountains.

The project will improve water quality (reduced sediment load and continued temperature attenuation under the cottonwood gallery canopy), preserve fisheries and recreation opportunities, preserve farmland, include planning for multi use components (fisheries, recreation, water quality, irrigation), and addresses public safety. The project will be used by the public for continued and safe access to residents and recreational users through Swamp Creek Road. The project will preserve fisheries through bank stabilization and preserve irrigated farmland through continued use of three existing headgates. The secondary reviewers noted that the fisheries benefit could have been further substantiated (that is, number of redds affected), and that the possibility of Swamp Creek Road to act as a pinch point warranted further discussion.

### Project Management

The SGCCD administrator will oversee the entire project. The BTC SCWG coordinator will provide immediate oversight to the engineer, monitor construction activities, and coordinate with Sweet Grass County staff. There appears to be adequate staff to administer and manage the project and the schedule allows appropriate time to prepare documentation and complete the project by November 2011. The BTC SCWG coordinator will solicit involvement of adjacent landowners and inform the public of the project progress.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$6,730	\$0	\$3,700	\$10,430
Professional & Technical	\$17,742	\$0	\$0	\$17,742
Construction	\$75,526	\$0	\$11,000	\$86,526
Total	\$99,998	\$0	\$14,700	\$114,698

The budget appears reasonable to fund the project. The applicant provided a detailed breakdown of costs and the unit costs used to develop the budget appear to be reasonable and adequate. The budget includes matching funds contributed by Sweet Grass County and in-kind contributions from the county, the SGCCD and BTC SCWG.

Several technical concerns may affect the budget. For example, additional consideration should have been given to upstream problems that helped cause the current erosion, the timeline may be overly ambitious, revegetation funds were not included in the cost estimate, and engineering hours to obtain permits and hydraulic modeling appear to be below typical levels.



## Environmental Evaluation

The proposed stream channel stabilization will have a net positive effect on the environment. The applicant was aware of construction issues, permitting requirements, and best management practices. All of the alternatives considered would have significant environmental impacts and it is difficult to determine which would have the least impact in the long term. The proposal does not address the primary cause of bank instability and further bank stabilization may cause erosion downgradient or on the opposite bank. In spite of those concerns, there is an immediate need to protect existing structures.

## Funding Recommendation

The DNRC recommends grant funding of \$99,998 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 24

<b>Applicant Name</b>	Sidney Water Users Irrigation Districts 1 and 2		
<b>Project Name</b>	Increasing Irrigation Efficiency: Districts 1 and 2, Phase 3		
<b>Amount Requested</b>	\$ 100,000		
<b>Other Funding Sources</b>	\$ 15,000	NRCS, In-Kind	
	<u>\$ 100,250</u>	Applicant, In-Kind	
<b>Total Project Cost</b>	\$ 215,250		
<b>Amount Recommended</b>	\$ 100,000		

## Project Summary

### Project History

The Montana Water Resources Board constructed the infrastructure within the Sidney Water Users Irrigation District in 1938 to irrigate a total of 4,753 acres around the community of Sidney. Montana turned the project over to the district in 1995. Local irrigators now operate and manage the project. Inspections and operational observations have determined that the leakage loss from a 1.4 mile reach of the 6.7-mile High Canal is approximately six cfs, or 1,050 acre-feet of water per year. Rehabilitation of the High Canal would convert 6.7 miles of open canal to a 4.3 mile long closed pipeline system that would irrigate the same acres. The district has already completed phases 1 and 2 of a project to convert 6.7 miles of open canal to a 4.3 mile pipe to irrigate the same acres served by the lateral.

### Technical Approach

The applicant proposes to complete phase 3 of the project to replace the existing open canal with a closed pipeline system by installing an additional 1.4 miles of 24-inch PVC pipe. The pipeline system will be installed along a new route and the district will abandon the existing easement for the canal. The pipeline installed in phase 3 will discharge back into the High Canal at its termination. All turnouts located along the lateral will be replaced with new turnout assemblies and will be equipped with flow meters to measure the water applied to each field. The applicant considered rehabilitation of the existing lateral through installation of a concrete liner. This alternative was rejected due to cost. The applicant also considered use of a different sized pipeline and also rejected that alternative due to cost.

The applicant will have to obtain new easements and likely abandon existing easements associated with the existing High Canal route. The applicant indicated that preliminary discussions have begun with affected landowners and that they appear willing to grant the new easements.

Cost estimates included a 10% contingency to protect against price increases. Even so, the cost estimates provided in the application appeared to be too low for the work proposed. The applicant has indicated that the district will absorb any cost overruns.

Specific tasks to be accomplished:

- Grant administration and project set up;
- Final design and development of construction plans;
- Installation of new pipeline;
- Installation of turnouts and pipeline appurtenances
- Abandonment and reclamation of existing canal; and
- Project close out.

### Resource and Citizen Benefits Analysis

Updating the infrastructure of the irrigation canal will eliminate a substantial seepage loss and, thereby, conserve 1,050 acre-feet per year of water in the Yellowstone River. The conversion to a closed pipeline and the installation of meters will promote the efficient and beneficial use of water, improve both water delivery management and on-farm water management, and improve production on the acres served by the lateral. Improved efficiency will reduce water demand and conserve approximately 190,000 kWh of energy as a result of a reduction in pump run time. The project will also conserve resources through on-farm water efficiency and conservation.

Phase 3 is another step in a long range plan and cooperative partnership with NRCS to improve irrigation efficiency and production within the district. The local community, businesses, CD's, and irrigators expressed strong support for this project.

### Project Management

NRCS will provide the final design, construction documents, and construction oversight throughout the project. The district president will act as the project manager throughout construction. The application did not include a plan for grant administration and coordination of funding sources. The district will act as the contractor for installation of the new pipeline delivery system. Construction crews and equipment will be provided by the district and coordinated by the district president. Upon award of the grant, the district will collect data to facilitate completion of the final design and will proceed with construction.

The district may not be able to complete this project within the projected schedule. The time required to complete the final design and the reliance on a volunteer crew will likely delay construction. Moreover, the applicant has applied for a second RRG grant for a similar project of similar size. If awarded both grants, the applicant might be unable to complete both projects within the proposed two-year schedule.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$15,150	\$15,150
Professional & Technical	\$0	\$0	\$15,000	\$15,000
Construction	\$100,000	\$0	\$85,100	\$185,100
Total	\$100,000	\$0	\$115,250	\$215,250

The applicant requested \$100,000 in grant funding. The applicant and affected landowners have signed up for funding assistance through the NRCS EQIP to provide the \$85,100 match for construction. The NRCS will provide engineering and construction oversight at no cost to the district. The applicant has used this funding approach to successfully complete previous projects. The project will serve 10 irrigators and 752 acres once completed. The proposed project is not projected to increase the annual assessment per acre.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term environmental impacts include noise, dust, and vegetative disturbance and can be mitigated by using best management practices.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 25

<b>Applicant Name</b>	Sidney Water Users Irrigation District		
<b>Project Name</b>	Increasing Irrigation Efficiency: District 5, Lateral 2		
<b>Amount Requested</b>	\$ 100,000		
<b>Other Funding Sources</b>	\$ 154,970	Applicant	
	\$ 30,000	NRCS EQIP	
<b>Total Project Cost</b>	\$ 284,970		
<b>Amount Recommended</b>	\$ 100,000		

## Project Summary

### Project History

The Montana Water Resources Board constructed the infrastructure within the Sidney Water Users Irrigation District in 1938 to irrigate a total of 4,753 acres around the community of Sidney. Montana turned the project over to the district in 1995. Local irrigators now operate and manage the project. Inspections and operational observations have determined that seepage loss from Lateral 2 occurs at a rate of approximately 2.7 cfs or 460 acre-feet per year of water.

### Technical Approach

The applicant proposes to rehabilitate Lateral 2 by replacing the existing 3.5 miles of open canal with a new 1.8 mile gravity fed, closed pipeline system that would irrigate the same acres. The pipeline system will generally follow the original lateral route, deviating in areas where the lateral would be straightened. The pipeline will start with 24-inch diameter PVC pipe and gradually step down to 12-inch PVC at the end of the lateral. All turnouts located along the lateral will be replaced with new turnout assemblies and will be equipped with flow meters to measure the water applied to each field.

The applicant considered rehabilitation of the existing lateral through installation of a concrete liner. This alternative was rejected due to cost. The applicant also considered an alternative route for the pipeline route and also rejected that alternative due to cost. The applicant will have to obtain new easements and likely abandon existing easements associated with the existing lateral route. The applicant indicated that preliminary discussions have begun with affected landowners and that they appear willing to grant the new easements.

Cost estimates included a 10% contingency to protect against price increases. Even so, the cost estimates provided in the application appeared to be too low for the work proposed. The applicant has indicated that the district will absorb any additional cost overruns.



Specific tasks to be accomplished:

- Grant administration and project set up;
- Final design and development of construction plans;
- Installation of new pipeline;
- Installation of turnouts and pipeline appurtenances;
- Abandonment and reclamation of existing canal; and
- Project close out.

## Resource and Citizen Benefits Analysis

Updating the infrastructure of the irrigation canal will eliminate a substantial seepage loss and, thereby, conserve 420 acre-feet per year of water in the Yellowstone River. Additionally, the conversion to a closed pipeline and the installation of meters will promote the efficient and beneficial use of water, improve both water delivery management and on-farm water management, and improve production on the acres served by the lateral. Improved efficiency will reduce water demand and conserve approximately 27,100 kWh of energy as a result of a reduction in pump run time. The project will also conserve resources through on-farm water efficiency and conservation. The proposed improvements will improve the production on the acres served by the lateral, effectively increasing commerce in the area. The elimination of seepage losses will result in a reduction in pump operational hours conserving approximately 27,100 kWh.

The proposed project is another step in a long range plan and cooperative partnership with NRCS to improve irrigation efficiency and production within the district. The local community, businesses, CD's, and irrigators expressed strong support for this project.

## Project Management

NRCS will provide the final design, construction documents, and construction oversight throughout the project. The district president will act as the project manager throughout construction. The application did not include a plan for grant administration and coordination of funding sources. The district will act as the contractor for installation of the new pipeline delivery system. Construction crews and equipment will be provided by the district and coordinated by the district president. Upon award of the grant, the district will collect data to facilitate completion of the final design and will proceed with construction.

The district may not be able to complete this project within the projected schedule. The time required to complete the final design and the reliance on a volunteer crew will likely delay construction. Moreover, the applicant has applied for a second RRG grant for a similar project of similar size. If awarded both grants, the applicant might be unable to complete both projects within the proposed two-year schedule.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$18,820	\$18,820
Professional & Technical	\$0	\$0	\$30,000	\$30,000
Construction	\$100,000	\$0	\$136,150	\$236,150
Total	\$100,000	\$0	\$184,970	\$284,970

The applicant requested \$100,000 in grant funding. The applicant and affected landowners have signed up for funding assistance through the NRCS EQIP to provide the \$136,150 match for construction. NRCS will provide engineering and construction oversight at no cost to the district. The applicant has used this funding approach to successfully complete previous projects. The project will serve five irrigators and 247 acres once completed. The proposed project is not projected to increase the annual assessment per acre.



## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term environmental impacts include noise, dust, and vegetative disturbance, can be mitigated by using best management practices.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 26

<b>Applicant Name</b>	Clinton Irrigation District
<b>Project Name</b>	Schoolhouse Lateral Pipeline Conversion

<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Source</b>	\$ 14,400 Applicant
<b>Total Project Cost</b>	\$ 114,400

<b>Amount Recommended</b>	\$ 100,000
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## Project Summary

### Project History

CID originally constructed the project in the 1920s. The project consists of a canal intake located on the Clark Fork River in Missoula County, about 6.5 miles of main canal, and a number of lateral canals. The canals provide water to approximately 66 farms on 812 acres. The schoolhouse lateral is approximately 1.6 miles long. The proposed project will place about 1,400 feet of the lateral into a pipe which is located adjacent to the county road. Enclosing the lateral in this location will eliminate sediment runoff into the lateral. That sediment eventually flows into 60 springs, a tributary to the Clark Fork River. 60 springs was a trout hatchery, but the sediment reduced its effectiveness.

### Technical Approach

CID proposes to put about 1,400 feet of the schoolhouse lateral into a pipe adjacent to East Mullan Road. CID considered four alternatives to the proposal, including no action, a pipe line, an open precast concrete ditch lining, and a fabric liner. Those alternatives would not solve the sediment transport problem or the public safety problem of an open ditch and they would cost more than the preferred alternative.

The proposed start date is May 2011. Final engineering, design, and construction would be complete by June 2012. This schedule appears to be reasonable.

Specific tasks to be accomplished:

- Select an engineer;
- Complete final design;
- Regulatory compliance;
- Material purchase;
- Advertise for bids and award a construction contract;
- Pipe installation;
- Construction closeout; and
- Grant closeout.

## Resource and Citizen Benefits Analysis

This project will allow approximately 0.73 cfs of flow to remain in the Clark Fork River, eliminate sediment transport into 60 springs, and allow for full water delivery to about 140 acres of irrigated land. This project is the second part of a phased plan to rehabilitate the entire irrigation system.

Members of the Montana Congressional delegation, the Missoula County commissioners, Bonner Development, the DOT, and the CID have all expressed support for this project.

## Project Management

The project management plan seems to be adequate. The PER has been completed. The final details and construction bid documents are not yet completed. The time schedule is adequate to complete the project within the next two years.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$7,300	\$7,300
Professional & Technical	\$20,000	\$0	\$5,450	\$25,450
Construction	\$80,000	\$0	\$1,650	\$81,650
Total	\$100,000	\$0	\$14,400	\$114,400

CID will provide the matching funds. The budget is adequate to complete the project.

## Environmental Evaluation

Construction activity will create dust and noise in the immediate construction site area, but steps will be taken to minimize these impacts. The project will eliminate a public safety hazard of the open ditch next to the county road, eliminate sediment transport into 60 springs, leave about 0.73 cfs in the river, and allow for 140 acres of irrigated land to receive full allotment of irrigation water.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## Project No. 27

**Applicant Name** East Bench Irrigation District  
**Project Name** Main Canal Check Structure Rehabilitation

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 20,000 Applicant  
**Total Project Cost** \$ 120,000

**Amount Recommended** \$ 100,000

## Project Summary

### Project History

The EBID has identified eight check structures within the irrigation canal system that have significant operational problems and contribute to inefficient use of the available water. Problems with these structures include clogging of slide gates with debris and difficulties in adjusting canal depth, as required for efficient water delivery. As a result, more water may be diverted into the canal than is needed.

## Technical Approach

The district evaluated reconstruction of the check structures, as well as replacement of the slide gates with various types of overflow gates. Based on this analysis and budget considerations, the district proposes to replace one slide gate in three of the check structures with an overflow gate. Costs for all alternatives, except for total reconstruction of the grade structures, were similar. All work could be completed during one construction season.

Specific tasks to be accomplished:

- Replace one of the existing slide gates on the Laden check structure with a Rubicon over-shot flume gate in each of three check structures in the irrigation canal.

## **Resource and Citizen Benefits Analysis**

Installation of the overflow gates should allow the irrigation district to more accurately match the quantity of water diverted into the canal to irrigation demand. The proposed project will conserve the estimated 22 cubic feet of water per second that presently are needed to operate the existing check structures and that cannot be used for land irrigation. Minimizing the quantity of water required to operate the check structure will allow use of this water to provide an estimated additional 7,855 acre-feet of water for irrigation during dry years, or allow the water to remain in Clark Canyon Reservoir or the Beaverhead River during wetter years.

A more dependable supply of irrigation water will allow landowners within the district to improve their existing irrigation systems and, perhaps, to grow higher value crops. Less water lost to canal inefficiencies will, at times, allow more water to remain in Clark Canyon Reservoir or the Beaverhead River, improve the fisheries, and provide more recreational opportunities. District members, the BWC, Beaverhead County commissioners, a Montana state senator, and other interested parties submitted letters of support for this project.

## **Project Management**

The proposed project management appears reasonable, complete, and easily implementable.

## **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$3,000	\$3,000
Professional & Technical	\$18,500	\$0	\$0	\$18,500
Construction	\$81,500	\$0	\$17,000	\$98,500
Total	\$100,000	\$0	\$20,000	\$120,000

All costs appear to be project costs. Matching funds for management and construction are in the form of in-kind services and are presumed to be secure. No increase in the existing assessment of \$22.50 per acre is anticipated. In total, 22,690 acres are presently served by the irrigation district. There is no plan to expand the district as part of this project.

## **Environmental Evaluation**

Short-term construction impacts will be limited to small areas and will be relatively brief in duration. Long-term environmental impacts are positive in terms of water conservation and more efficient irrigation water delivery.

## **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.



## **Project No. 28**

**Applicant Name** Lower Musselshell Conservation District  
**Project Name** Lower Musselshell Delphia Melstone Irrigation Structure Rehabilitation Lining

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 25,000 Delphia Melstone Canal WUA  
**Total Project Cost** \$ 125,000

**Amount Recommended** \$ 100,000

### **Project Summary**

#### **Project History**

The Delphia Melstone storage and distribution works were completed in 1952. The canal delivers water to approximately 6,085 acres in three gravity-flow canals. Over the past 56 years of service, the irrigation infrastructure has begun to deteriorate. The water delivery system has water shortages. An operational and maintenance facility review recommended improvements to the system. Priorities for rehabilitation have been established based on potential increases in water use efficiency, with the intent of incrementally improving the irrigation system as funds become available.

Significant operational problems include a check structure and high seepage area on the Southside Canal which cause substantial water loss and irrigation system inefficiency. Water loss from the structure and this section of the canal is a minimum of nine cfs, or 18 acre-feet per day.

#### **Technical Approach**

Facility improvements were prioritized by the degree of increase in water use efficiency and water conservation associated with each project. Replacing the Southside Canal check structure and lining a section of the bench area are high priority projects. The proposed project includes: a new concrete check structure, slide gates, control equipment, corrosion resistant paint, water level sensor, stilling well for a check structure, and lining a 500-foot canal section. Five alternatives for this project were considered. The project would begin in May 2011 with a final completion date of February 2012.

Specific tasks to be accomplished:

- Install new check structure with two slide gates; and
- Rehabilitate 500 feet of canal and install liner.

### **Resource and Citizen Benefits Analysis**

The new check structure and canal section will benefit water conservation and recreation, contribute to fishery restoration, protect land resources, increase crop production, stabilize the irrigation system operations, decreased water diversions and spills, and maximize the beneficial use of available water. This project will reduce water loss and, thereby, conserve the natural flow in the Musselshell River and increase storage water in Deadman's Reservoir. The resulting multi-use benefits include conservation of fish and wildlife habitats in the Musselshell River watershed and Deadman's Reservoir and conservation of additional water to support irrigation and recreation.

The project will result in an annual water savings of 10% of the maximum flow of 90 cfs in the Delphia Melstone Southside Canal. This would amount conservation of nine cfs, or 3,240 acre-feet of water per irrigation season. The conserved water could provide either an additional two acre-feet per acre of water to irrigate 1,620 acres of productive land or 3,240 acre-feet of water to enhance instream flows in the Musselshell River.



The project is expected to have a significant economic benefit. Increased irrigation efficiency will enhance crop production by providing full irrigation on 1,620 acres of land. The direct economic benefit to the irrigators would be \$380,000 per year. Public support for this project has been expressed during a public meeting and in letters.

### **Project Management**

The proposed management plan is adequate. LMCD will retain an engineering firm to administer the grant and the project and to provide survey, design and specifications for the project. The project will be ready to implement construction fall 2011, after the end of the irrigation season.

### **Financial Assessment**

<b>Budget Item</b>	<b>RRGL Grant</b>	<b>RRGL Loan</b>	<b>Match</b>	<b>Total</b>
<b>Administration</b>	\$0	\$0	\$3,000.00	<b>\$3,000</b>
<b>Professional &amp; Technical</b>	\$17,500	\$0	\$0	<b>\$17,500</b>
<b>Construction</b>	\$82,500	\$0	\$22,000	<b>\$104,500</b>
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$125,000</b>

This project will be funded by the grant and in-kind services from the Delphia Melstone Canal WUA. The grant will fund materials and construction. Grant and project administration will be in-kind.

### **Environmental Evaluation**

The short-term impacts to air quality and water quality can be mitigated by following best management practices. The project will have minimal impact to the surrounding environment.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### **Project No. 29**

<b>Applicant Name</b>	Madison Conservation District		
<b>Project Name</b>	South Meadow Creek Water Efficiency		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$	26,730	Applicant
	\$	24,572	PPL Montana TAC Fisheries
	\$	1,911	DEQ
	\$		
<b>Total Project Cost</b>	\$	153,213	
<b>Amount Recommended</b>	\$	100,000	

### **Project Summary**

#### **Project History**

The Madison Conservation CD established the SMCWE project to evaluate aging and failing irrigation infrastructure on South Meadow Creek. Land use practices and out-dated irrigation structures and methods have degraded instream flows and riparian habitats associated with South Meadow Creek. Traditional ranching in the area faces challenges to implement conservation-based improvements while still remaining economically viable operations. Evaluation of resource or irrigation improvements is difficult because there is no recent information on flow quantities, water quality, or stream habitats for

South Meadow Creek. This project will evaluate present conditions and determine needs for restoration and improvement to existing irrigation structures.

### Technical Approach

The project area consists of South Meadow Creek, a tributary of the Madison River that flows 1.1 miles east, out of the South Meadow Lake in the Tobacco Root Mountains into Ennis Lake near McAllister. The upper five miles of South Meadow Creek flow through a steeply graded forest region and the lower six miles flow through low gradient reaches dominated by agriculture and ranching land uses.

The Madison Conservation CD proposes to evaluate present conditions of water quality and quantity, habitat conditions, and the irrigation infrastructure. The project includes planning, design, and construction. Implementation will occur in four phases, including phase 1: research the water quality and water quantity of South Meadow Creek; phase 2: plan and design restoration alternatives; phase 3: prepare advanced design and engineering of restoration alternatives; and, phase 4: construct the preferred alternative. Five alternatives were proposed and evaluated for improving the flow and habitat of South Meadow Creek.

Specific tasks to be accomplished:

- Monitor water quality and quantity conditions to establish baseline data;
- Investigate, design and construct restoration alternatives for severely degraded sites;
- Design and construct recommended replacement irrigation infrastructure that may be impacting water quantity, quality, and habitat in South Meadow Creek;
- Develop detailed riparian restoration plans for priority diversion structures to improve aquatic and fisheries habitat; and
- Replace priority diversion structures with modern, water efficient diversions and monitoring devices to conserve water in South Meadow Creek.

### **Resource and Citizen Benefits Analysis**

The SMCWEP has potential to benefit multiple renewable resources. Conservation of water resources will be attained through assessment of current conditions and implementation of restoration and irrigation improvements. Other benefits from this project include improved water quality management, improvements to irrigation infrastructure, and development of restoration alternatives. There are opportunities minimize livestock grazing impacts to South Meadow Creek, improve the fishery, and improve angling opportunities in the Madison watershed. The project will conserve soil, water, wildlife, and fisheries and benefit citizens. The applicant included five letters of support for the project with the application.

### **Project Management**

The proposed management plan is adequate. The project sponsor will retain a consultant for project and grant administration. The project will be ready to implement construction the fall of 2011, after the end of the irrigation season.

### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$17,710	\$17,710
Professional & Technical	\$47,100	\$0	\$8,831	\$55,931
Construction	\$52,656	\$0	\$26,672	\$79,328
Total	\$99,756	\$0	\$53,213	\$152,969

The applicant provided a detailed cost estimate for the preferred alternative. This project is 72% (\$99,756) funded by the grant and 28% (\$53,213.00) funded by the project sponsor, DEQ 319, other

restoration funds, landowner match and in-kind services. Funds are both secured and unsecured at the time of application submittal and if awarded, the project will be in position to start implementation in 2011. They have more funds in budget than the construction costs require (or) funding exceeds project costs.

### **Environmental Evaluation**

The SMCWEP will have an overall positive impact on soil, water, and vegetation resources in the watershed. The short-term impacts related to construction quality can be mitigated through permitting.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### **Project No. 30**

<b>Applicant Name</b>	Confederated Salish Kootenai Tribes		
<b>Project Name</b>	Jocko Upper S Canal Lining		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$	<u>170,000</u>	Applicant
<b>Total Project Cost</b>	\$	270,000	
<b>Amount Recommended</b>	\$	100,000	

### **Project Summary**

#### **Project History**

The infrastructure within the FIIP was constructed in 1940 by the BIA to provide irrigation within the Flathead Valley around Arlee. The CSKT, working in cooperation with the BIA, completed a system evaluation in May 2010 that outlined the condition of the FIIP infrastructure. Inspections and operational observations identified significant seepage losses along a 4,000-foot section at the head of the Jocko Upper S Canal. The DNRC completed a seepage study in 2009 that measured seepage losses at 6.6 cfs or 1,800 acre-feet of water, annually. Rehabilitation of the Upper S Canal would eliminate and allow for more efficient use of water diverted from the Jocko River.

#### **Technical Approach**

CSKT proposes to rehabilitate a 4,000-foot reach of the Upper S Canal by installing either a geomembrane or geocomposite liner. The existing canal will be cleaned to remove all organic material and, where necessary, reshaped. The installation will include one foot of gravel ballast to anchor the liner in place and protect against puncture from animal traffic. CSKT also considered lining the canal with concrete and the use of a spray-on polymer lining.

Meetings with the applicant provided sufficient information to support the selection of the preferred alternative. The application provided a square-foot cost estimate for each alternative but did not provide detailed information to substantiate the square-foot cost determination. The concrete liner would cost significantly more. The spray on lining would not have resolved the problem.

Specific tasks to be accomplished:

- Grant administration and project setup;
- Survey, final design, and development of construction plans;
- Canal cleaning, grading, and preparation;
- Liner installation; and
- Site reclamation and rehabilitation.



## Resource and Citizen Benefits Analysis

Continued improvement of the Upper S Canal will promote the efficient and beneficial use of the water resources. Installation of the liner through the 4,000-foot reach will eliminate water lost to canal seepage and reduce the volume diverted from the Jocko River. Installation of the liner will also reduce the required O&M of the system.

The project will conserve 1,800 acre-feet of water per year in the Jocko River. The improved instream flow will benefit the local fishery, including bull trout, a threatened species, and westslope cutthroat trout, a Montana species of concern.

The project will have a beneficial effect on the local economy which relies heavily on the fishing and recreation associated with the Jocko River. Improvements to the irrigation system will also ensure the stability and continued use of the Upper S Canal, preserving irrigation and agricultural production on 2,500 acres.

## Project Management

The CSKT will contract with an engineering firm to provide engineering services, construction administration, and grant administration. In addition, the engineering firm will be retained as the project manager to perform duties that may include project advertising, project scheduling, construction administration, and project closeout. The contracted engineering firm will have experience in working with and administering grant funded projects. As a representative for CSKT, the selected engineering firm will be directly responsible to the Tribal Council and Cooperative Management Entity (CME) and will provide recommendations for final decision. The CME will be responsible for management of construction crews and installation of the canal liner.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$0	\$0
Professional & Technical	\$0	\$0	\$23,000	\$23,000
Construction	\$100,000	\$0	\$147,000	\$247,000
Total	\$100,000	\$0	\$170,000	\$270,000

The applicants requested \$100,000 in grant funding. The applicant will provide \$23,000 to hire a licensed engineer for design, construction, and grant administration. The applicant will also provide the construction crew and equipment to install the 4,000 feet of liner at a cost of \$147,000. The current assessment rate per acre is \$23.45 and will not increase due to the completion of this project. This funding approach has been used in the successful completion of other projects within the FIIP and is feasible. The project will serve 2,500 acres once completed.

The liner is an oil-based product, and given the volatility of the market, it is possible that the purchase price for the liner will exceed the budget. If the budget is insufficient, CSKT will rehabilitate a shorter length of canal.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term environmental concerns associated with construction will include noise, dust, and vegetative disturbance and can be mitigated by using best management practices.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.



### **Project No. 31**

**Applicant Name** Malta Irrigation District  
**Project Name** Dodson North Canal Siphons Replacement

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 187,834 Applicant  
**Total Project Cost** \$ 287,834

**Amount Recommended** \$ 100,000

### **Project Summary**

#### **Project History**

MID operates and maintains an irrigation system in the Milk River Basin that was constructed in the early 1900s by the USBR. The USBR is still the owner of the system. The proposed project includes the replacement of two of three siphons on the Dodson North Canal, a 200 cfs canal that supplies water to the northern portion of the 42,500-acre district. Both buried concrete conduits are nearly 100-years-old and have deteriorated beyond repair. The third siphon is still in good condition and does not require repair or replacement.

#### **Technical Approach**

In 2009, MID contracted with an engineering firm to inspect and make recommendations regarding the deteriorated condition of the structures. A PER was prepared. The PER recommended replacement of two of the three siphons associated with the Dodson North Canal. Both structures recommended for replacement leak significantly and cross ravines that carry significant snowmelt and stormwater. The project will result in the conservation of approximately 1,800 acre-feet of water annually lost to leakage. The conserved water would be available for use by downstream irrigators or to maintain instream flow in the Milk River. The project is scheduled for construction early in 2012.

Specific tasks to be accomplished:

- Contract with an engineering firm to design two replacement siphons;
- Procure materials in accordance with statutory requirements; and
- Replace existing siphons at Station 386+25 and Station 454+65.

### **Resource and Citizen Benefits Analysis**

Resource benefits associated with this project include the preservation of a system that diverts water from the Milk River to irrigate 42,500 acres in north central Montana. The project will conserve approximately 1,800 acre-feet of water that is being lost to leakage due to the deteriorated condition of two siphons on the Dodson North Canal. The proposed project also includes construction of a weir to ensure the efficient management of water diverted from the Milk River, a stream that experiences drought conditions an average of six years out of every ten.

This project is part of an effort to upgrade and maintain irrigation systems along the Milk River in northern Montana. The system was constructed nearly 100 years ago and is in serious need of rehabilitation. The system is essential to the economy of this sector of Montana, which is based primarily upon agriculture. The project is supported by affected irrigators, local businesses, local and state leaders, the USFWS, and citizens within the affected area.

## Project Management

Management of this project will be the responsibility of the district, in cooperation with its engineer and USBR. The district understands the public concern regarding the economic and environmental impacts its system has on the local area. Accordingly, the district actively solicited and obtained public input. The project is planned for early 2012, construction with completion by May 2012.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$ 8,404	<b>\$8,404</b>
Professional & Technical	\$0	\$0	\$39,568	<b>\$39,568</b>
Construction	\$100,000	\$0	\$139,862	<b>\$239,862</b>
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$187,834</b>	<b>\$287,834</b>

In addition to the RRGL grant requested in this application, MID proposes to fund the project with cash reserves and in-kind contributions of district labor and equipment. The RRGL grant will be used to purchase materials for the project and to provide a portion of the construction contingency. MID currently assesses its irrigators \$22.02 per acre plus \$4.25 per acre-foot of water used. This project will not affect this assessment or charge.

## Environmental Evaluation

The adverse impacts associated with this project are temporary and associated with construction activities. Mitigation will be practiced to the greatest extent possible to avoid impacts to private land required for access. The long-term beneficial impacts include the continued irrigation of a major portion of the 42,500 acres served by MID and the social and economic benefits that result. In addition, flows in the Milk River Basin will be enhanced, with benefits to habitat, wetlands, and downstream irrigators.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## Project No. 32

<b>Applicant Name</b>	Roberts Carbon County Water and Sewer District		
<b>Project Name</b>	Roberts Wastewater System Improvements		
<b>Amount Requested</b>	\$ 100,000		
<b>Other Funding Sources</b>	\$ 15,000	Applicant	
	\$ 500,000	TSEP	
	\$ 450,000	CDBG	
	\$ 119,632	SRF	
<b>Total Project Cost</b>	\$1,184,632		
<b>Amount Recommended</b>	\$ 100,000		

## Project Summary

### Project History

The Roberts wastewater system was constructed in 1922. It consists of a gravity collection station, treatment lagoon, pump station, and a spray irrigation system. Only minor upgrades have been made since the facility was first constructed. Over time, leaks that allow groundwater infiltration have developed in the sewer system. Excess flow could overtop, causing sewage to spill into nearby Rock Creek.

## Technical Approach

The Roberts Carbon County WSD proposes to rehabilitate its wastewater system for the purposes of reducing infiltration and complying with state and federal standards. The PER evaluated a variety of alternatives for either sewer repair or in place rehabilitation. It also evaluated options to rehabilitate the existing pump station. The evaluation considered technical and financial feasibility, environmental impacts, public health and safety, O&M, and public input. The district proposes a combination of pipe replacement and in-place rehabilitation. The PER established priorities for incremental progress if full funding is not available. The district also proposes to rehabilitate the pump station because the facility is old and in disrepair.

The PER did not address necessary improvements to the spray irrigation portion of the system. The irrigation storage pond likely leaks effluent to the groundwater and the spray irrigation agreement with a local landowner will expire in a few years.

Specific tasks to be accomplished:

- Complete engineering and design for the proposed project;
- Replace 1,295 feet of sewer pipe with new pipe;
- Perform cured in place rehabilitation of 6,458 feet of sewer pipe;
- Replace 18 manholes and rehabilitate another seven; and
- Rehabilitate the pump station including new intake screens, an emergency generator, controls repair, flow meter, and the purchase of confined space entry equipment.

## **Resource and Citizen Benefits Analysis**

This project intends to eliminate 58 million gallons of inflow from the sewer system preserving an equivalent volume of groundwater. This volume likely will also support instream flows in Rock Creek. Repairs to the sewer system will reduce the leakage of sewage into groundwater during the late summer and winter when local groundwater levels are low and will also reduce the potential for sewage spills from overloaded manholes and the treatment lagoon during high flow times. Reduced in flows will also reduce energy costs to operate the pump station by about \$4,000 per year.

Even though the project does not include improvements to the spray irrigation system, solving the problems with treatment system capacity will alleviate restrictions on development. Roberts is located between Red Lodge and Billings and could provide opportunities for the construction of affordable housing to benefit these surrounding population centers.

## **Project Management**

The proposed project management plan is adequate. The district has a board of directors, holds regular meetings, and employs a certified operator. The district has contracted with a project engineer, in accordance with state procurement standards who will perform the design, supervise bidding and contractor procurement, and supervise construction. The district has also contracted with a grant coordinator who will administer all grant and loan funds. The project will easily be designed and ready for construction either in 2011 or 2012, depending upon the time necessary to complete the other requested funding cycles. Construction can be completed in less than one year.

## **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$51,562	\$51,562
Professional & Technical	\$0	\$0	\$191,280	\$191,280
Construction	\$100,000	\$0	\$841,790	\$941,790
Total	\$100,000	\$0	\$1,084,632	\$1,184,632



The district will contribute \$15,000 in local reserves funds to the project. In addition to the RRGL grant, the district proposes to fund the balance of the project with a combination of CDBG and TSEP grants.

The estimated sewer only user rate will be \$22.96 per month. Combined with the existing water rate of \$45.87, the rate will be approximately \$68.83 per month for each of the 111 connections. Compared with other Montana communities in similar situations, this rate appears reasonable.

The district funds are available and committed now. The district has applied for the other funds and is awaiting notification. In the event that other funds are not available, the district will make incremental improvements, based on priorities defined by the PER.

### **Environmental Evaluation**

This project will preserve the groundwater resource and protect the surface water of Rock Creek. All of the proposed construction takes place within already disturbed areas. Negative environmental impacts will be short-term and construction related. Overall, the project will have a long term positive environmental impact.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### **Project No. 33**

<b>Applicant Name</b>	Chippewa Cree Tribe of the Rocky Boy's Reservation		
<b>Project Name</b>	Dry Fork Farms Irrigation Enhancement		
<b>Amount Requested</b>	\$	97,429	
<b>Other Funding Sources</b>	\$	26,000	Dry Fork Farms Cost Share
	\$	<u>252,312</u>	USDA AWEP
<b>Total Project Cost</b>	\$	375,741	
<b>Amount Recommended</b>	\$	97,429	

### **Project Summary**

#### **Project History**

The Chippewa Cree Tribe of the Rocky Boy's Reservation operates the Dry Fork Farms that is located in the lower Box Elder Creek drainage. The farm grows alfalfa that is available to the cattle ranchers on the Reservation and provides employment to Tribal members. Revenues from the farm are re-invested in the farm and are used to maintain the Stone Child College Endowment Fund for scholarships, and provide mini-grants for special populations on the Reservation. The proposed expansion of the existing irrigation on the Dry Fork Farms is part of the plan to extend irrigation to a total of 2,300 acres.

#### **Technical Approach**

In addition to the proposal, the applicant considered no action, and one action alternative to the proposal. The applicant also considered a cost/benefit analysis study to determine the most cost efficient water usage. The cost/benefit option would entail a study of how best to diversify the crop base to maximize profits, while minimizing water losses by decreasing the number of irrigated acres. The preferred alternative consists of extending pipe to new irrigated acreage while utilizing a SCADA system for efficient irrigation water application. The last alternative contained the extension of the pipe and addition of the 320 irrigated acres, but without the SCADA system. Concerns include mapping errors in the location of the new irrigated acres and the proposed project schedule. Most of the dates have already elapsed.



Specific tasks to be accomplished:

- Install 4,200 linear feet of 15-inch, 125-pound pipe for a 100% gravity-fed irrigation expansion;
- Install the irrigation system on 320 acres at Dry Fork Farms;
- Install a SCADA system to better manage surface water for new irrigated acres;
- Produce an irrigation plan using the SCADA system; and
- Test project components and put into use.

### Resource and Citizen Benefits Analysis

The Dry Forks Farm of the Rocky Boys Indian Reservation grows alfalfa that is available to cattle operators on the Reservation. This hay has been essential for the operators during the recent drought. The farm also employs Tribal members as range riders and to perform other agricultural jobs.

The enhancement of the Dry Fork Farms Irrigation system will extend irrigation to an additional 320 acres of land that is now farmed as dry land. The proposed system will withdraw water from Box Elder Creek downstream of Bonneau Reservoir and divert it northward towards the farm. This water would be available for storage in Browns Reservoir, for irrigation using the proposed two center pivots, or to generate electricity in a micro hydropower generating facility. The Tribe is studying the feasibility of a small WTP which could feed into the public drinking system for the community of Box Elder.

The irrigation extension will be gravity fed, thus eliminating the need for a pump. It is estimated that crop yield will increase by 50% over dry land farming methods and more than 23 acre-feet of water will be saved on an annual basis. If this water is not released from Bonneau, it will increase the pool for recreation and other pursuits.

### Project Management

The Dry Forks Farm will utilize water rights negotiated in the reserved water rights settlement. With the enlargement of Bonneau Reservoir from 1,000 acre-feet to 3,500 acre-feet, there is enough storage capacity to mitigate drought conditions for the proposed expansion of Dry Forks Farm irrigation. The proposal outlined the schedule for the project, but it appears that this project had been submitted for funding previously because the dates and timelines for completing the project are not realistic. The plans are not clear whether micro-hydropower generation will be included in the project or if the application is a combination of several improvement proposals for using the Tribal water. Management plans for the project construction lack detail.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$26,000	\$26,000
Professional & Technical	\$14,000	\$0	\$36,000	\$50,000
Construction	\$83,429	\$0	\$216,312	\$299,741
Total	\$97,429	\$0	\$278,312	\$375,741

The Tribe is requesting \$97,429 in RRGL funding to be supplemented by \$252,312 in an AWEPP grant. This has been requested but not yet secured. The Tribe will provide \$26,000 in-kind for project management and administration. The Tribe will use RRGL funds to buy pipe, screen, valves and air vents, the SCADA system, and a contractual water budget. Annual assessment of the irrigated acres served by the system is projected to rise by 46% to cover cost increases. The Tribe has applied for funds from two separate lending institutes and to the Farm Service Agency (FSA) for \$645,000 and is awaiting payment of \$37,000 from the BIA.

## Environmental Evaluation

Environmental impacts should mostly be beneficial. The Tribe will use the SCADA system to better manage irrigation timing and amount of water diverted for irrigation. This is also a drought mitigation measure. Distributing water through a pipe rather than an open ditch will reduce the spread of noxious weed seeds and reduce the use of chemicals to control weeds.

## Funding Recommendation

The DNRC recommends grant funding of \$97,429 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 34

<b>Applicant Name</b>	Flathead Joint Board of Control
<b>Project Name</b>	Jocko Upper J Canal Diversion Structure

<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 10,000 Applicant
<b>Total Project Cost</b>	\$ 110,000

<b>Amount Recommended</b>	\$ 100,000
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## Project Summary

### Project History

The FIIP is near the Town of St. Ignatius. The existing Jocko Upper J Canal Diversion Structure uses check boards. The structure is operationally inefficient and unnecessarily diverts water from Agency Creek, a traditionally dewatered stream. The goal of the project is to improve water conservation and increase instream flows in Agency Creek.

### Technical Approach

The FJBC proposes to replace the existing diversion structure in the Jocko Upper J Canal with an Arm-Tec Over-Shot Gate, a new headgate, and a measurement flume. The over-shot gate will be built with a sluice gate system to reduce the sedimentation deposition upstream of this structure. The sluice gate and over-shot gate also will be designed for selective fish passage.

The applicant considered replacing the existing diversion structure with either a new concrete diversion structure or with an Air Bladder Over-Shot Gate diversion structure. The concrete diversion structure would have cost less but would have caused sediment deposition upstream of the structure and would not have accommodated selective fish passage. The Air Bladder Over-Shot Gate diversion structure would have a similar benefit as the proposal but would have been more costly.

Specific tasks to be accomplished:

- Grant administration and project set up;
- Detailed sit evaluation, selection, and survey;
- Final design and development of construction plans;
- Demolition of existing structure;
- Installation of new diversion gate; and
- Project close out.

## Resource and Citizen Benefits Analysis

The proposed project will improve operational efficiency, conserve 181 acre-feet of water, annually, and increase instream flows in Agency Creek. The installation of a measurement flume will promote the efficient and beneficial use of the water resource, while minimizing the effects on Agency Creek. The proposed improvements will preserve and improve the Agency Creek fishery by reducing the diversion from the stream during low flow periods. The new structure will allow for selective fish passage to prevent entrainment in the canal system. The project will serve 800 acres and will benefit agricultural production. The project will also benefit recreation in the Flathead Valley.

## Project Management

The FJBC will contract an engineering firm to provide engineering services and to administer the grant and construction. The engineering firm will also manage the project, to include project advertising, project scheduling, construction administration, and project closeout. The contracted engineering firm will have experience in working with and administering grant funded projects. As the representative for FJBC, the engineering firm will be directly responsible to the Tribal Council and will provide recommendations to the Tribal Council for final decisions.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$0	\$0
Professional & Technical	\$11,500	\$0	\$10,000	\$21,500
Construction	\$88,500	\$0	\$0	\$88,500
Total	\$100,000	\$0	\$10,000	\$110,000

The applicant requested \$100,000 in grant funding. for the design and construction of a diversion structure, headgate, and flow measurement device for the Jocko Upper J Canal. FJBC will fund the balance of the project. The current assessment rate per acre is \$23.45 and will not increase due to the completion of this project. The application included a 15% contingency to protect against cost overruns.

## Environmental Evaluation

The diversion structure is located within Agency Creek and will require full compliance with applicable NEPA and Tribal regulatory controls, including cultural and ALCO, or 87A permits. Short-term disturbances will be mitigated by following best management practices. Long-term environmental impacts will be positive.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## **Project No. 35**

<b>Applicant Name</b>	Lockwood Irrigation District
<b>Project Name</b>	Intake Canal Spillway Replacement

<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 218,615 Applicant
<b>Total Project Cost</b>	\$ 318,615

<b>Amount Recommended</b>	\$ 100,000
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### **Project Summary**

#### **Project History**

LID, along with the DNRC and a contracted engineering firm, assessed the district irrigation infrastructure and developed a conditional assessment report. The report included a rehabilitation priorities list that identified critical structures in need of rehabilitation. Replacement of the spillway on the intake canal ranked as the highest priority and is necessary to continue district operations because it is the sole diversion point on the Yellowstone River.

#### **Technical Approach**

LID proposes to replace the emergency spillway on the intake canal with a new concrete spillway. LID also considered no action, replacement of the spillway with a grouted riprap spillway, and replacement of the spillway with a riprap gabion basket spillway.

The proposed concrete spillway would meet all project goals and provide an operational life of at least 30 years. No action would likely result in failure of the spillway. The other spillway designs would meet project goals, but would require significant maintenance and have an expected life of only 15 years. Although the proposed project would have the highest initial cost, its net present worth cost, based on the life expectancy of the project, was the lowest.

The application did not define the permitting issues in detail, although no significant issues were identified that could prevent permits from being obtained. The project is scheduled to begin in July 2011 and be completed by July 2012.

Specific tasks to be accomplished:

- Design the replacement intake canal spillway;
- Complete regulatory compliance;
- Develop and advertise construction bid;
- Select contractor;
- Demolish spillway;
- Prepare site for foundation work;
- Install new spillway;
- Closeout construction; and
- Closeout grant.

### **Resource and Citizen Benefits Analysis**

Replacement of the spillway is necessary to continue district operations and improve system efficiency. The proposal would benefit natural resources by protecting water quality in the Yellowstone River; save energy by using untreated water for irrigation; and, preserve the backup water supply for Lockwood. Ensuring a sustainable water supply will encourage development of new residential subdivisions within the district. Preservation of water quality will be measured by water quality sampling; energy savings will



be measured by tracking monthly energy consumption by the district; preservation of the LID will be documented through pump station records; and, economic development will be tracked through increased tax revenues from the LID.

A local state senator, the Lockwood Steering Committee, the water & sewer district, the school district, the fire district, DNRC, Yellowstone County commissioners, and individual LID members submitted letters of support for the project.

### **Project Management**

LID will manage the project, with assistance from the contracted engineer. LID appears to have adequate staff to administer and manage the project. The proposed schedule is sufficient to complete the project by July 2012. The public involvement plan includes monthly district meetings that are open to the public. LID officials will accept public comment at any time throughout the project. The LID will follow state procurement procedures for hiring a licensed engineer as well as a licensed contractor. The contractor will be responsible for providing materials.

### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$7200	\$7200
Professional & Technical	\$34,157	\$0	\$4000	\$38,157
Construction	\$65,843	\$0	\$207,415	\$273,258
Total	\$100,000	\$0	\$218,615	\$318,615

The budget appears reasonable to fund the project and has significant supporting documentation and engineering cost estimates, including a PER. The applicant provided a detailed breakdown of costs. The unit costs used to develop the budget appear to be reasonable and adequate. The project will serve a population of 4,306 people or 1,280 households, two ranches or farms and 2,113 acres. There was no discussion of alternative funding if the RRGL grant is not awarded.

### **Environmental Evaluation**

The proposed project will have a net positive effect on the environment. Dust mitigation will be required. Other short-term negative environmental concerns associated with construction can be mitigated by using best management practices.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## **Project No. 36**

<b>Applicant Name</b>	Glendive, City of	
<b>Project Name</b>	Glendive Floodplain Feasibility Study	
<b>Amount Requested</b>	\$	100,000
<b>Other Funding Sources</b>	\$	25,000 Applicant
	\$	20,000 CDBG
	\$	630,000 Federal Appropriation
	\$	10,000 Dawson County
<b>Total Project Cost</b>	\$	800,000
<b>Amount Recommended</b>	\$	100,000

## **Project Summary**

### **Project History**

The USACE constructed a levee along the Yellowstone River in 1959 to protect the City of Glendive from open water flooding during a 500-year flood event. The levee was not specifically designed to accommodate ice jams. In addition, the construction of Interstate 94 resulted in an elevated embankment that was constructed across the west bank floodplain to shorten the length of the bridge that spans the Yellowstone River. Due to these factors, the FEMA has determined that the levee is not adequate to provide protection under ice jam conditions. As a result, approximately one-third of the Glendive geographic area is within the regulated floodplain. Public safety in the area is at risk and the floodplain designation significantly hinders the use, resale, and lending ability by the affected property owners. The Glendive wastewater treatment lagoons also are within the regulated floodplain and flooding would pollute the Yellowstone River.

### **Technical Approach**

The City of Glendive proposes to request USACE to complete a feasibility study to assess potential alternatives for mitigation of the levee and present a preferred alternative. Preliminary studies by the USACE have indicated that one of the critical aspects of any resolution to the potential for flooding would be the construction of an additional bridge span for the Interstate 94 crossing of the Yellowstone River. The proposed study will encompass detailed engineering, economics, and environmental studies to quantify flood risks, evaluate alternatives and evaluate the environmental impacts of the proposed alternatives. The study would incorporate an EA to comply with the NEPA.

Specific tasks to be accomplished:

- Administer grant and set up project;
- Prepare a scoping report;
- Evaluate existing and future conditions;
- Formulate analysis;
- Develop recommendations;
- Complete the EA; and
- Close out the project.

## **Resource and Citizen Benefits Analysis**

Completion of the proposed study will provide a detailed description of mitigation measures that will protect the West Glendive area. There are approximately 152 businesses and residential structures as well as the west Glendive wastewater treatment lagoon located within the FEMA regulated floodplain. If the existing levee were to be overtopped, approximately 557 residents including the only grocery stores in the city, a fertilizer plant, and the wastewater treatment lagoon would be flooded. The lagoon serves all

of West Glendive area and is located at an elevation that is below the water surface elevation that would result from a 100-year flood event (base flood elevation). The proposed study will help identify an alternative that will protect the Yellowstone River from pollution during flooding, preserve water quality in the Yellowstone River, preserve the use and sustainability of approximately one-third of the geographic area of the City of Glendive, and restore fish and wildlife habitat.

### **Project Management**

The City of Glendive will contract with USACE to provide engineering services to complete the feasibility study. The Glendive finance department will provide grant administration. Procurement of contractual services will follow the federal acquisition regulation and will be managed by USACE. USACE will supervise the consultants, including negotiation of scope and modifications, review and payment of invoices, and quality assurance. USACE and Glendive will jointly administer public involvement and coordination with other agencies.

### **Financial Assessment**

<b>Budget Item</b>	<b>RRGL Grant</b>	<b>RRGL Loan</b>	<b>Match</b>	<b>Total</b>
<b>Administration</b>	\$0	\$0	\$0	<b>\$0</b>
<b>Professional &amp; Technical</b>	\$100,000	\$0	\$700,000	<b>\$800,000</b>
<b>Construction</b>	\$0	\$0	\$0	<b>\$0</b>
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$700,000</b>	<b>\$800,000</b>

Glendive requested \$100,000 in grant funding and proposed that the balance of funding be provided by the city, by Dawson County, a CDBG grant, and USACE. The project is heavily dependent upon obtaining a \$630,000 federal appropriation.

### **Environmental Evaluation**

The proposed feasibility study will provide a detailed mitigation plan to protect the west portion of the city of Glendive from flooding. There are no environmental impacts that will result from the proposed study.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### **Project No. 37**

<b>Applicant Name</b>	Fort Shaw Irrigation District
<b>Project Name</b>	Water Quality and Quantity Improvement
<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 186,522 Applicant
	\$ 4,800 SRWG
<b>Total Project Cost</b>	\$ 291,322
<b>Amount Recommended</b>	\$ 100,000

### **Project Summary**

#### **Project History**

The FSID project was originally completed in 1908, with upgrades completed in 1961. The FSID and the USBR identified key irrigation improvements in 1982 and estimated 46% efficiency for the 12 miles of canals and 89 miles of lateral canals. The Simms Creek siphon is upgradient of the majority of the



distribution system. The siphon had concrete repairs in 1909 and a catastrophic failure in 2009 at the same location. A private engineer has inspected the structure and has deemed the equipment worthy of concrete repair.

### Technical Approach

The district proposes to repair the Simms Creek siphon, to improve the C-K ditch system by abandoning 6,993 linear feet of the leaky "K" ditch, and to serve existing irrigation needs through a series of pipeline drops from an upslope ditch. These improvements will reduce water usage by two percent and improve water quality by five percent for the C-K ditch system. Leaking lateral pipe on the "K" line will abandon 6993 linear feet and feed the turnouts from the "C" ditch.

Alternatives evaluated for the siphon included no action, repair the siphon, and replace the siphon. Alternatives evaluated for the C-K ditch included no action, canal lining, and four alternate connection routes. Other project alternatives were rejected due to capital cost. The no action alternative for the siphon was rejected based on the age of the Simms Creek Siphon and the catastrophic failure in 2009. The no action alternative for the K ditch was rejected because it would not achieve the conservation objectives. The other action alternatives were rejected due to capital cost.

Specific tasks to be accomplished:

- Finalize engineering designs and establish agreements from local landowners and easements for the C-K ditch modification;
- Initiate NEPA and NHPA studies and develop consensus with USBR on the final project engineering and design for the siphon and the ditch modification;
- Obtain final engineering and design drawings;
- Establish easements, prepare construction drawings, specifications, design report and cost estimates;
- Obtain all necessary permits;
- Solicit materials and contractors;
- Construct siphon improvements; and,
- Repair Simms Creek Siphon, install Man-Way Hatch, install pipeline drops and abandon sections of the "K" line.

### **Resource and Citizen Benefits Analysis**

This project will accomplish multiple benefits, including reducing saline seeps, providing improved water deliveries, increasing production for crop usage, and increased economic support in the community. The application also indicated that the project would conserve 1,200 acre-feet per year of water, thus improving flows in the Sun River; improve the specific conductance in Adobe Creek by 5%; return 20 irrigated acres to agricultural production; and, improve fisheries and recreation based on water conservation and improved water quality.

### **Project Management**

The FSID will manage the project. The DNRC considered problems with past performance for project and contract management on prior year's projects in the review process. The SRWG will manage public involvement through public meetings, group board meetings, and newsletters.



## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$5,800	\$5,800
Professional & Technical	\$14,400	\$0	\$4800	\$19,200
Construction	\$85,600	\$0	\$180,722	\$266,322
Total	\$100,000	\$0	\$186,522	\$291,322

The budget appears reasonable to fund the project and was well supported with documentation and engineering cost estimates. The applicant provided a detailed breakdown of costs. The unit costs used to develop the budget appear to be reasonable and adequate. Although engineering oversight is budgeted, but it does not appear that the budget included costs for final design, construction drawings and engineer involvement with the NEPA and NHPA studies. The budget did not include funds for USBR permitting and design review and approval. The project also might require field and laboratory testing and on-site inspection, but these were not included in the budget. Finally, any delays in equipment could delay the projected construction timeline. The application did not discuss alternative funding if the RRGL grant is not awarded.

## Environmental Evaluation

The proposed irrigation system improvements will have a net positive effect on the environment. A few construction issues were not included in the Environmental Checklist provided by the applicant. Short-term negative environmental concerns associated with construction can be mitigated by using best management practices. The DEQ may require a MPDES permit if the disturbed area is greater than one acre. The proposed concrete repair on the Simms Creek Siphon will have minimal environmental impacts compared with a replacement alternative.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 38

**Applicant Name** Montana Department of Natural Resources and Conservation  
Water Resources Division  
State Water Projects Bureau  
**Project Name** East Fork of Rock Creek Diversion and Fish Screen

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 15,000 RRGL Planning Grant  
\$ 91,447 Applicant  
\$ 100,000 FWP  
\$ 587,500 NRDP  
\$ 589,000 USFWS  
**Total Project Cost** \$1,482,947

**Amount Recommended** \$ 100,000

## Project Summary

### Project History

The FCWP was constructed by the State of Montana on USFS property in the late 1930s. FCWP is owned by DNRC and operated by the FCWUA. At the time construction began in 1936, the USFS issued the state a special use permit with stipulations. The permit required that a fish barrier be installed at the

canal inlet. Although how it came about is unclear, a variance was likely granted at that time because the barrier was never constructed. Now that cutthroat trout are a species of special concern, and bulltrout are federally listed as a threatened species, renewed emphasis has been placed on the requirement. As a condition for reissuance of the permit, USFS will require DNRC to install a fish screen at the inlet, thereby preventing fish from entering the canal. USFS also will require DNRC to maintain a minimum instream flow of five cfs in the East Fork of Rock Creek throughout the irrigation season.

### Technical Approach

DNRC proposes to contract with an engineer for the design of a replacement diversion structure that will incorporate a fish screen at the inlet to the FCWP Main Canal. The existing diversion structure will be removed and will be replaced with the new structure. A consultant will be hired to determine and specify the best type fish screen for the project.

In addition to the construction of a new diversion incorporating a fish screen, the project also proposes to install a permanent stream flow measuring device downstream from the diversion. This monitoring capability will help to ensure that DNRC maintains the required minimum instream flow in the East Fork of Rock Creek throughout the irrigation season.

Specific tasks to be accomplished:

- Contract with an engineering design firm for the design and construction management of the project, using the statutory qualifications-based method of procurement; and
- Award a contract to a qualified construction firm for construction of the project, using the statutory public advertisement and competitive bid method of procurement.

### **Resource and Citizen Benefits Analysis**

The proposed project includes three components. The major component is the installation of a fish screen to prevent fish, including both native cutthroat trout and native bulltrout, from migrating into the FCWP Main Canal from the East Fork of Rock Creek during the irrigation season. Other components include the replacement of the existing diversion structure and the installation of a permanent flow measurement device in the East Fork of Rock Creek. USFS, owner of the property upon which the project is located, has stipulated that a minimum instream flow of five cfs be maintained in the East Fork of Rock Creek during the entire irrigation season. The project provides for the preservation of the fishery in the East Fork of Rock Creek; the preservation of existing irrigation infrastructure; and, the preservation of fishery habitat through the maintenance of a minimum instream flow. The project also provides water management benefits through the installation of a permanent instream measurement device, enabling the FCWUA to effectively monitor and manage water use and instream flows.

Because the local economy depends on tourism, all efforts to maintain the fishery and wildlife habitat, particularly in the Rock Creek drainage, provide some economic benefits. This project provides for the protection of both cutthroat trout and bulltrout, thereby supporting federal efforts for the protection of both of these species.

This project will allow FCWUA to provide continuing irrigation water to 44 ranches in the upper and lower Flint Creek valleys in Granite County. This project also will benefit fish habitat, preserve the fishery, and support the local economy.

### **Project Management**

Management of this project will be the responsibility of the DNRC-SWPB. Engineering oversight during design and construction will be performed by DNRC staff engineers. Design of the fish screen and diversion structure will be performed by consultants, with actual construction to be publicly advertised and bid. Efforts will be made to keep the public and affected property owners informed during the construction of the project, scheduled to occur during the fall and early winter 2012.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$12,329	\$12,329
Professional & Technical	\$0	\$0	\$260,618	\$260,618
Construction	\$100,000	\$0	\$1,110,000	\$1,210,000
Total	\$100,000	\$0	\$1,382,947	\$1,482,947

In addition to the RRGL grant being requested with this application, the budget for the proposed project includes in-kind engineering management by DNRC staff engineers; a \$100,000 grant through the FWP Future Fisheries Grant Program; \$587,500 in grant funding through the NRDP; and, \$589,000 in grants through the Fisheries Restoration and Irrigation Mitigation Act administered by the USFWS. Of these funding sources, \$761,447 were secure at the time of this application. The budget does not include a loan component.

The 44 ranches comprising the FCWUA pay \$7.50 per acre-foot for irrigation water. This rate will not be affected by the proposed project.

## Environmental Evaluation

Other than typical, temporary impacts during construction, the environmental impacts associated with this project are beneficial. Long-term impacts include the enhancement of a critical irrigation system and its associated watershed; the protection of both a fisheries species of concern and an endangered species; the enhancement of habitat and a watershed through the enforcement of minimum instream flows; the enhancement of the local economy; and, the enhancement of public health and safety through the construction of a diversion facility within a USFS campground that meets current safety and public protection standards.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 39

**Applicant Name**                      Daly Ditches Irrigation District  
**Project Name**                         Hedge Canal Improvement

**Amount Requested**                \$ 100,000  
**Other Funding Sources**            \$ 6,000    Applicant  
    \$ 233,837    WRDA  
**Total Project Cost**                \$ 339,837

**Amount Recommended**            \$ 100,000  
**Project Summary**

### Project History

DDID, located in Ravalli County, serves 1,845 irrigators on 14,653 acres. The proposed project specifically affects the Hedge Canal, which serves 778 irrigators and 6,108 acres in the Bitterroot Valley. The Hedge Canal, constructed over 100 years ago, diverts water from the Bitterroot River and delivers it 25 miles downstream for irrigation. The Hedge Canal parallels the Bitterroot River downstream of the diversion point until moving into the valley. Over time the river has begun to erode the toe of the canal, weakening the structural integrity of the canal. Additionally, a spring has developed above the canal which saturates the foundation of the canal and has led to additional sloughing of the canal's toe into the river.



## Technical Approach

DDID proposes to rehabilitate Hedge Canal by developing the natural spring with piping to return flows to the river and stabilize 450 feet of the river bank. To manage spring water in the area, a gravel underdrain and perforated piping will be installed below the Hedge Canal, adjacent to the spring, to catch spring water and safely transfer it into the river. DDID will use an engineered-Rosgen method of installing riprap, tree root wads, and planting willows to stabilize the river bank.

DDID evaluated dewatering well and installation of a cutoff wall as an alternative to developing the spring. DDID evaluated riprap installation and vegetated riprap installation as alternatives to the proposed method for streambank stabilization. The application provided detailed cost estimates for each alternative and the cost/benefit analysis supported the selection of the preferred alternative. The project budgets included a 25% contingency to protect against price increases.

Specific tasks to be accomplished:

- Grant administration and project setup;
- Final design and development of construction plans;
- Site preparation and clearing;
- Removal of existing canal liner;
- Installation of spring under-drain;
- Re-construction of canal;
- Re-installation of canal liner;
- Installation of river bank stabilization measures; and
- Project closeout.

## **Resource and Citizen Benefits Analysis**

Implementation of the proposed stabilization measures will preserve the stability of the Hedge Canal and 450 feet of the Bitterroot River stream bank, prevent heavy sediment loading in the river, protect water quality, and preserve irrigation of 6,108 acres in the Bitterroot Valley. It was calculated that 24,000 cubic yards of river bank have already been deposited in the Bitterroot River. The project design incorporates natural elements and will create new habitat that will benefit the fishery.

Installation of a gravel underdrain will transfer a one cubic foot per second of flow from the adjacent spring into the Bitterroot River with no further damage to the river bank and canal toe. The project also will substantially reduce O&M costs associated with maintaining a stable river bank and canal toe in the area.

## **Project Management**

DDID will contract an engineering firm to provide engineering services and administer the grant and construction. The contracted engineering firm will have experience in working with and administering grant funded projects. The firm will be directly responsible to the board of directors and will provide recommendations for final decisions. The DDID manager will manage the project and oversee both the engineer and construction crews. DDID will follow state procurement procedures during the selection of an engineer and construction company. DDID has experience with this management approach with previous DNRC projects.

## **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$6,000	\$6,000
Professional & Technical	\$12,975	\$0	\$38,925	\$51,900
Construction	\$87,025	\$0	\$194,912	\$281,937
Total	\$100,000	\$0	\$239,837	\$339,837



DDID requested \$100,000 in grant funding for the project. The applicant will provide \$6,000 of in-kind services for project management. DDID also has applied for a WRDA grant to fund the balance of the project. That grant has not yet been awarded. The applicant indicated that the project will be implemented incrementally if the WRDA grant is delayed or denied. RRGL funds would be used for design, permitting, and material acquisition and the construction phase would be completed as state or federal funds became available. The current assessment rate per acre is \$21.11 and will not increase due to the completion of this project. This funding approach is feasible. The project will serve 6,108 acres once completed.

### **Environmental Evaluation**

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term environmental concerns associated with construction will include noise, dust, and vegetative disturbance, can be mitigated by using best management practices.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

#### **Project No. 40**

<b>Applicant Name</b>	Gallatin Gateway County Water and Sewer District
<b>Project Name</b>	Wastewater System Improvements

<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 750,000 TSEP
	\$ 600,000 STAG WRDA
	\$ 450,000 CDBG
	\$1,328,250 RD Loan
	<u>\$1,086,750</u> RD Grant
<b>Total Project Cost</b>	\$4,315,000

<b>Amount Recommended</b>	\$ 100,000
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### **Project Summary**

#### **Project History**

Gallatin Gateway is a community of 168 persons in 67 households. The community currently is unsewered. The area was developed well before county septic regulations were developed. There are many sub-standard onsite systems, some documented domestic well contamination, testimony about sickness due to contaminated private well water, and reports of illegal disposal of septic tank waste throughout the district. Gallatin County has issued a decision that no new development can occur until proposed septic systems can meet all required regulations. Because lot sizes are small, this likely will prohibit development and stall growth until a community-wide solution is implemented.

#### **Technical Approach**

The applicant evaluated a no action alternative, four collection system alternatives, three lift station alternatives, and, nine treatment/disposal alternatives. The screening process eliminated several alternatives. A full analysis was provided for gravity collection in streets versus alleys; a single, centralized lift station; a force main and gravity connection to the Utility Solutions WWTP at Four Corners; facultative treatment; partially-mixed aerated treatment; Advantex level 2 treatment; sequencing batch reactor treatment; spray irrigation; groundwater disposal; and, two separate treatment/disposal sites. The

analysis included a very thorough evaluation of all feasible alternatives. Cost estimates are reasonable and relatively straight-forward.

The applicant proposes a gravity collection system in the platted alleys; a single, centralized lift station near the northwest part of the district; a community septic tank & Advantex Level 2 treatment; and pressure-dosed drainfield located east of Highway 191.

Specific tasks to be accomplished:

- Implement gravity collection system in established alleys;
- Construct centralized (submersible) lift station in northwest corner of district;
- Secure a treatment plant location east of Highway 191;
- Implement the Advantex treatment system with pressure-dosed drainfield; and
- Secure the Montana Groundwater discharge permit.

### Resource and Citizen Benefits Analysis

The primary natural resource benefits include preservation of the aquifer quality through elimination of poorly-treated wastewater from on-site systems; preservation of surface water quality in the Gallatin River by eliminating sub-standard onsite systems near the riverbanks; and, preservation of fisheries through improved water quality in the Gallatin River. There may also be improved public health from the elimination of on-site systems and impacts to individual drinking water wells. There have been claims of illness.

### Project Management

The applicant has developed a sound project management plan that is consistent with the duties/responsibilities of the proposed project. Depending upon the success of the funding package, the project could be constructed and operational by 2013. The applicant has identified procedures and timeframes for procurement, public involvement, and consultant management. The application also has demonstrated a thorough understanding of the process for funding and implementing an infrastructure project of this magnitude.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$137,500	\$137,500
Professional & Technical	\$0	\$0	\$672,500	\$672,500
Construction	\$100,000	\$0	\$3,405,000	\$3,505,000
Total	\$100,000	\$0	\$4,215,000	\$4,315,000

With the anticipated funding package of TSEP, STAG, DNRC, CDBG, RD Loan and RD Grant, the expected sewer rate will be 257% of the calculated target rate, of which district residents have been apprised. All 67 households within the district boundary will be affected by the sewer rate, 67% of which qualify as low-to-moderate income under the HUD guidelines. Despite affordability concerns, 32 households signed the support petition to bring sewer to Gallatin Gateway. The funding package appears reasonable and the district's candidacy for the TSEP, CDBG and RRGL grants and RD funding programs is confirmed. Without the \$100,000 DNRC RRGL grant, it is likely that the district could possibly see an increase in the RD grant amount. Cost estimates for the recommended solution are reasonable and well described.

## Environmental Evaluation

The overall long term environmental impacts are expected to be positive. The project will reduce pollutant discharges to the groundwater aquifer and to the Gallatin River. It will also reduce the risk of human sickness from the consumption of contaminated groundwater. Some short term, construction-related impacts can be expected, but it is anticipated that they will be minimized and mitigated to the greatest extent possible.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 41

<b>Applicant Name</b>	Greenfields Irrigation District		
<b>Project Name</b>	Big Coulee Wastewater and Water Quality		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$	59,000	Applicant
	\$	6,300	SRWG
<b>Total Project Cost</b>	\$	165,300	
<b>Amount Recommended</b>	\$	100,000	

## Project Summary

### Project History

GID was organized in the early 1900s and consists of a canal system which delivers irrigation water to 520 farms and ranches on approximately 90,000 acres of irrigated land in Cascade and Teton counties. This project is part of a continuing effort by GID to upgrade its many canals.

### Technical Approach

GID proposes to line 3,500 feet of Beale Canal with Huesker Canal 123012 geocomposite liner. GID considered four alternatives to the proposal, including no action, abandoning the canal, lining with shotcrete, and lining with Canal Seal-It. Canal Seal-It was eliminated because it has only a one year life and would have to be reapplied every year. The shotcrete was eliminated because it is more expensive and previous uses have entailed additional maintenance. The GID has previously installed many lineal feet of canal liner throughout the system. The USBR will be consulted if technical problems with the project arise, but none are anticipated at this time.

The proposed start date is July 2011, with construction completion in November 2011. This schedule appears to be reasonable.

Specific tasks to be accomplished:

- Order liner materials;
- Canal bank shaping;
- Install liner;
- Site cleanup;
- Contract closeout; and
- Future water quality monitoring.

## Resource and Citizen Benefits Analysis

This project will be a continuation of improvements that GID has been making to the canal system. The project will eliminate about five cfs of seepage from a section of the Beale Canal. That seepage is causing saline seepage damage to about 200 acres of land below the canal, increasing the salinity of Big Coulee, and causing sediment load in the coulee. The project is expected to reduce the salinity by about 25% and the sediment load by 5%. The reduction of salinity and sediment load should improve the fishery in Big Coulee. The SRWG, Cascade County CD, and the GID have expressed support for the project.

### Project Management

The project management plan for this project seems to be adequate. DNRC considered problems with GID's past performance for project and contract management on prior year's projects in the review process. GID will advertise for the supplier of the liner materials. The time schedule is adequate to complete the project within the next two years.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$7,500	\$7,500
Professional & Technical	\$0	\$0	\$4,800	\$4,800
Construction	\$100,000	\$0	\$53,000	\$153,000
Total	\$100,000	\$0	\$65,300	\$165,300

GID will provide \$59,000 in-kind services for grant administration and construction. SRWG has committed \$6,300 of in-kind services for grant administration and design. The application did not include a net present worth analysis, but the preferred alternative is technically the most cost effective.

### Environmental Evaluation

Construction activity will create dust and noise in the immediate construction site area, but steps will be taken to minimize these impacts. The area around the construction area will be reclaimed upon completion of construction. The completed project will help to improve water quality in Big Coulee by reducing sediment and salinity and reducing seepage.

### Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.



## **Project No. 42**

<b>Applicant Name</b>	Park Conservation District		
<b>Project Name</b>	Park-Branch Paradise Canal Water Efficiency		
<b>Amount Requested</b>	\$ 100,000		
<b>Other Funding Sources</b>	\$ 11,980	PBPCD	
	\$ 3,000	Park CD	
<b>Total Project Cost</b>	\$ 114,980		
<b>Amount Recommended</b>	\$ 100,000		

### **Project Summary**

#### **Project History**

PBPCD delivers irrigation water to 75 shareholders in the Paradise Valley. The system is comprised of more than 30 miles of canals. A 700-foot reach of the Park Branch Canal that runs through highly permeable soils has been identified as a primary area of concern due to considerable seepage losses and the potential for bank failure. An 820-foot section of this canal has already been replaced with pipe along the same hillside where this project is proposed. Water savings will be used to augment irrigation at the lower end of the canal system that now suffers from water shortages.

#### **Technical Approach**

The proposed project is the first step in a multi-phased rehabilitation and water efficiency program that the Park CD and PBPCD are developing. This first step is proposed to eliminate severe seepage and associated saturated ground adjacent to the canal. Canal bank failures in the past have resulted in flooding and complete shut-downs of the canal for repairs.

Currently, there are approximately 974 acres downstream of the project that do not receive full service irrigation during peak irrigation season due to seepage losses in the canal. Installing a 42-inch pipeline will eliminate seepage in this stretch of the canal, minimize the potential for canal bank failure, conserve water, and increase delivery efficiency to downstream acres.

Specific tasks to be accomplished:

- Project rehabilitation design and review;
- Grade the existing canal to a consistent slope;
- Replace 700 feet of canal with 42-inch diameter pipeline;
- Install concrete collar and backfill trench;
- Rehabilitate saturated land below and adjacent to the canal; and
- Test project components and put into use.

### **Resource and Citizen Benefits Analysis**

The Park Branch Canal has failed on two separate occasions in the past, resulting in flooding of the valley floor, the loss of irrigation water, and downtime of the canal delivery while repairs were being made. Studies have shown that a minimum of 0.96 cfs of irrigation water is being lost to seepage along a 700-foot stretch of the canal that lies on highly permeable soils. The elimination of this seepage will eliminate the need for water rationing downstream of this section of the canal.

Seven acres of land adjacent to the canal are continually saturated and have become a haven for nuisance plants and noxious weeds which then have spread to neighboring land. Elimination of the seepage will provide the opportunity to rehabilitate these acres to productive land.

Increasing the efficiency of downstream irrigation will increase the revenues of the PBPCD shareholders, which, in turn, will improve the local and state tax bases. Organizations and individuals have expressed their support for this project.

### Project Management

PBPCD will manage the project and Park CD will administer the grant. The applicant will also contract for engineering services and construction inspection. The project has not yet been designed, but the project is not scheduled for completion until July 2012.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$5,600	\$5,600
Professional & Technical	\$24,500	\$0	\$0	\$24,500
Construction	\$75,500	\$0	\$9,380	\$84,880
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$14,980</b>	<b>\$114,980</b>

The application provided a detailed cost estimate for the preferred alternative, using current probable construction costs. Park CD and PBPCD will provide in-kind contract administration services for this project. The PBPCD will also provide \$9,380 in matching funds towards the construction portion of the project. Operations and maintenance costs are estimated to be approximately \$1,350 per year and this will be incorporated into PBPCD's annual operating budget. If there are minor overages, PBPCD will cover the costs.

### Environmental Evaluation

The primary goal of this project is to improve the condition and efficiency of the Park Branch Canal. The project will result in a reduction of possible valley floor flooding with the placement of the new pipe. It will also result in the cessation of seepage and saturation of ground adjacent to the canal, improved soil quality and reduced propagation of noxious weeds.

### Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 43

**Applicant Name**            Huntley Project Irrigation District  
**Project Name**             Lower Canal Seepage Lining

**Amount Requested**            \$ 100,000  
**Other Funding Sources**        \$ 18,000    Applicant  
     \$ 10,000    An Individual Water User  
**Total Project Cost**            \$ 128,000  
  
**Amount Recommended**        \$ 100,000

### Project Summary

#### Project History

HPID was designated for development in 1904 and construction began in 1905. The project delivers water through about 446 miles of canals to 740 farms and ranches on approximately 30,000 acres of

irrigated land in Yellowstone County. This project is part of a continuing effort by HPID to upgrade the district's many canals.

#### Technical Approach

HPID proposes to line 2,000 feet of the lower canal with Huesker Canal 123012 geocomposite liner. HPID considered three alternatives to this proposal, including no action, concrete canal lining and geomembrane canal lining. The concrete canal lining was eliminated because it is more expensive and previous uses have resulted in additional maintenance. The geomembrane lining has been successfully installed in many lineal feet of canals in Montana and other parts of the country.

HPID will hire an engineering consultant to complete the final design, help advertise for bids, and provide construction inspection. The proposed start date is September 2011 with construction completion in January 2012. This schedule appears to be reasonable.

Specific tasks to be accomplished:

- Hire an engineer;
- Final design;
- Construction contractor selection;
- Canal bank shaping;
- Install liner;
- Site cleanup; and
- Contract closeout.

#### **Resource and Citizen Benefits Analysis**

This project is a continuation of improvements that HPID has been making to their canal system. The project will eliminate about 2.5 cfs of seepage from a section of the lower canal. That seepage is causing significant water loss and property damage adjacent to this portion of the canal. The canal lining will help to provide the full amount of irrigation water to the land further down the canal. The efficient delivery of the irrigation water will result in less water diverted from Anita Reservoir and more water left in the reservoir for fisheries and recreation. The project will also result in decreased costs to pump the water into the lower canal. HPID has expressed support for this project.

#### **Project Management**

The project management plan seems to be adequate. HPID has completed a number of similar projects to this in the past. HPID will advertise for a construction contractor to complete the project. The time schedule is adequate to complete the project within the next two years.

#### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$1,300	\$1,300
Professional & Technical	\$20,000	\$0	\$0	\$20,000
Construction	\$80,000	\$0	\$26,700	\$106,700
Total	\$100,000	\$0	\$28,000	\$128,000

HPID intends to provide \$16,700 in matching funds for grant administration and construction. An individual water user will contribute \$10,000 for materials. At this time, the funds remain uncommitted. The 10% construction contingency might not be adequate for this project. The proposal did not include reclamation costs. If actual costs exceed the projected costs, the project may need to be scaled back.



## Environmental Evaluation

Construction activity will create dust and noise in the immediate construction site area, but steps will be taken to minimize these impacts. The area around the construction area will be reclaimed upon completion of construction.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 44

<b>Applicant Name</b>	Anaconda-Deer Lodge County
<b>Project Name</b>	Systemwide Water Meter Installation

<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 25,350 Applicant
	<u>\$3,622,708</u> NRDP
<b>Total Project Cost</b>	\$3,748,058

<b>Amount Recommended</b>	\$ 100,000
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## Project Summary

### Project History

Major portions of the public water system serving the urban area of Anaconda and Deer Lodge County were installed by the Anaconda Company and date back to 1900. Ownership and operation of the system were assumed by Atlantic-Richfield Company and later conveyed to Washington Corporation, before ADLC acquired the system in 1992. The current system serves approximately 5,792 people through 2,708 active service connections. Water is supplied from a six-well field on the west edge of Anaconda. Widespread groundwater contamination is present near the well field and prevents expansion of the community water supply. The aging distribution system has experienced significant leakage over the years and has resulted in the replacement of 44,000 lineal feet of the distribution system since 2003 with grant funding from the NRDP. Additional portions of the system have been identified as needing replacement. A majority of the water system is currently unmetered. This results in excessive water use and stresses the existing water supply. The NRDP has been increasingly insistent that Anaconda meter its water system, in conjunction with continued water main replacements, and has recently considered requiring metering as a condition of future funding awards.

### Technical Approach

After an extensive public education and outreach plan, in conjunction with the completion of a Metering Implementation Plan and a Water System Rate Study, the ADLC Council of Commissioners decided to proceed with system-wide metering as an essential water conservation measure. ADLC examined several different alternatives which involved phasing of the metering over time, but ultimately selected the alternative to meter the entire community at once.

The proposed project is financially feasible and is expected to reduce water usage in the community by approximately 20%. The implementation schedule is reasonable and includes finalization of a majority of the financing in late 2010, design in early 2011, and construction during the summer and fall 2011.

Specific tasks to be accomplished:

- Install 2,642 water meters.



## Resource and Citizen Benefits Analysis

The project has quantifiable resource conservation and management benefits. The project includes the installation of water meters, which will result in overall conservation and better management of the water supply serving ADLC. The project will also result in a reduction of pumping from the well field and a corresponding conservation of energy.

## Project Management

ADLC has nine consecutive years of experience administering NRDP-funded major water system improvements and its staff and consultant resources will be similarly engaged on this project. The majority of the work will occur on private property and will require heavy staffing commitment from the water department, as well as the need for a public liaison. The project management plan is well thought out and provides sufficient management for a successful project. ADLC will continue to inform the public through regularly scheduled work sessions and commission meetings. The project management plan provides for contract management with regulatory and funding agencies, consultants, contractors, and other involved parties. ADLC has allocated an adequate budget for grant administration. The project budget includes funding to support the financial and administrative aspects of the project.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$3,205	\$0	\$9,520	\$12,725
Professional & Technical	\$0	\$0	\$509,261	\$509,261
Construction	\$96,795	\$0	\$3,129,277	\$3,226,072
Total	\$100,000	\$0	\$3,648,058	\$3,748,058

The project budget is complete and includes adequate detail to show that the proposed budget is sufficient to complete the proposed project. ADLC and the proposed project are eligible for all of the funding sources in the proposed funding strategy. If ADLC is successful with its funding applications, the entire funding package will be in place and the project will be ready to proceed. The applicant is a local government and has the ability to collect charges for debt and operation. The projected residential water and sewer rate is \$39.64 per month. This rate includes the debt service for a previous project and the O&M costs of the system. The new rate will affect all households. This proposed rate is 79% of the DOC target rate which indicates the project is affordable for residents. Cost estimates were provided for the options considered for each project component and were used to help determine preferred alternatives. Cost estimates are reasonable and adequate.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term construction-related impacts will be controlled through permitting and proper construction practices. No significant environmental impacts were discovered in the analysis.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## **Project No. 45**

**Applicant Name** Fairfield, Town of  
**Project Name** Water System Improvements

<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 49,750 Applicant
	\$ 500,000 TSEP
	<u>\$ 350,250</u> SRF
<b>Total Project Cost</b>	\$1,000,000

**Amount Recommended** \$ 100,000

### **Project Summary**

#### **Project History**

The Fairfield water system was originally constructed in the 1940s and currently consists of seven wells, a distribution system, and two elevated water storage tanks. The aquifer from which the water wells draw is recharged by irrigation practices in the area and the town has a history of water shortages during the months prior to the irrigation canals being turned in for the season. Other system deficiencies include deteriorating water mains, lack of point of use meters, and inadequate distribution system looping. The proposed project will retrofit three wells with VFD to more efficiently use the aquifer. The project includes installation of meters so that Fairfield can conserve and control water use. The project also includes installation of new piping which will improve redundancy for distribution to one side of town.

#### **Technical Approach**

The PER evaluated alternatives to improve water supply distribution and control systems, including: construction of a new well and improvements to the existing wells. The preferred alternative is the installation of VFDs at three wells to optimize production. Aquifer testing was not completed to demonstrate and quantify that the preferred alternative will actually result in more water production. The VFDs will allow these wells to operate more efficiently by significantly reducing well on/off cycles. The selection of the water meters, piping installation, and control improvements was well reasoned. The primary resource benefit of the project is the conservation and management of the groundwater resource.

The implementation schedule is reasonable and includes finalization of financing in June 2011, design in late 2011, and construction during summer 2012.

Specific tasks to be accomplished:

- Install VFDs and pumps on three wells;
- Install 470 lineal feet of water main;
- Install water meters for all services; and
- Install an improved well control system.

### **Resource and Citizen Benefits Analysis**

The project has quantifiable resource conservation and management benefits. The project includes the installation of water meters which will result in overall conservation and better management of groundwater. Installation of the improved control system will also have management benefits. Installation of meters should reduce water usage and the installation of the VFDs will reduce energy demands of the system. The project is consistent with the county growth policy and the Fairfield capital improvement plan (CIP). The project has good support from the public and businesses.

## Project Management

The proposed project involves three funding agencies and will require a significant grant administration effort. Fairfield proposes to coordinate grant administration between the Fairfield finance officer and the engineer. The engineer will inform each funding agency of project progress. The project management plan outlines the duties for the finance officer, engineer, attorney, bond counsel, and mayor/council. The plan provides for a good staff of specialists to perform duties important to the project within their respective areas of expertise. Fairfield will continue to inform the public through regularly scheduled board meetings and newsletters. The project management plan provides for contract management with regulatory and funding agencies, consultants, contractors, and other involved parties. Fairfield has allocated an adequate budget for grant administration. The project budget includes funding to support the financial and administrative aspects of the project. Because the project does not require acquisition of land, the project is ready to design and construct once the financial package has been completed. The project should easily be completed within two years and, more likely, 18 months.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$84,200	\$84,200
Professional & Technical	\$50,000	\$0	\$142,150	\$192,150
Construction	\$50,000	\$0	\$673,650	\$723,650
Total	\$100,000	\$0	\$900,000	\$1,000,000

The project budget is complete and includes adequate detail to show that the proposed budget is sufficient to complete the proposed project. Fairfield and the proposed project are eligible for all of the funding sources in the proposed funding strategy. If Fairfield is successful with its funding applications, the entire funding package will be in place and the project will be ready to proceed. The applicant is a local government and has the ability to collect charges for debt and operation. The projected residential water rate is \$36.00 per month. This rate includes the debt service for this project and the O&M costs. The new rate will affect 358 households. This proposed combined water and sewer rate is 120% of the DOC target rate, which indicates the project is affordable for residents. Cost estimates were provided for the options considered for each of the project components and were used to help determine preferred alternatives. Cost estimates are reasonable and adequate.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term construction-related impacts will be controlled through permitting and proper construction practices.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.



## **Project No. 46**

<b>Applicant Name</b>	Fort Peck Tribes	
<b>Project Name</b>	Lateral L-2M Rehabilitation	
<b>Amount Requested</b>	\$ 100,000	
<b>Other Funding Sources</b>	\$ 6,400	Applicant
	<u>\$ 39,000</u>	Fort Peck WUA
<b>Total Project Cost</b>	\$ 145,400	
<b>Amount Recommended</b>	\$ 100,000	

## **Project Summary**

### **Project History**

The Fort Peck Tribes propose to rehabilitate a one-half mile reach of Lateral L-2M within the FPIP. This project includes rehabilitation and lining of a 2,640 foot section of Lateral L-2M with a canal liner. Water losses due to seepage in this section of L-2M are calculated to be 900 acre-feet. The primary goal of this project is to ensure sustained, efficient and effective delivery of irrigation water through the Wolf Point-Frazer Unit. With current conditions, the FPIP cannot meet irrigation demands during the peak irrigation months of July and August. The 5,020 acres served by the Lateral experience reduced watering sets and/or rationed water during irrigation peaks. The system improvements will result in a substantial increase in water delivery levels and will enable the development of acres that now are unable to be irrigated.

### **Technical Approach**

The applicant considered a no action alternative, the preferred alternative rehabilitation of the canal with the use of CANAL SEAL™, rehabilitation of the canal with Shotcrete, and rehabilitation of the reach with Pond Guard Liner. The preferred alternative, as described in the PER and the application will rehabilitate the 2,640-foot section of Lateral L-2M and install a Canal<sup>3</sup> liner. This alternative was selected based on effective seepage control, water conservation, water management, and overall cost. Project completion is estimated to be June 2012.

Specific tasks to be accomplished:

- Contract with a licensed professional engineer to develop the final rehabilitation design and assist with construction management;
- Obtain the necessary permits to ensure that the project meets all regulatory requirements;
- Prepare Lateral L-2M for rehabilitation by removing organic material and shaping the canal to desire dimensions;
- Install the liner in accordance with manufacturer's recommendations, under the guidance of the engineer;
- Ensure all issues with installation have been addressed;
- Develop as-built plans to document any changes made in the field; and
- Submit proper documentation and close out grant.

## **Resource and Citizen Benefits Analysis**

The primary renewable resource benefits associated with this project are conservation of water, preservation of irrigated acres, and development of irrigated acres. Rehabilitating and lining the canal will stop seepage, re-establish 20 acres of irrigation, and increase the operational head at the end of the system for a more efficient water management and use. An estimated 900 acre-feet of water will be conserved. The water will be available in the canal system for further development.



## Project Management

The Fort Peck Tribes and FPWUA will assume a significant portion of the project management and grant administration for this project. The contracted engineering firm will provide project engineering, construction inspection, and grant administration assistance. The contracted engineer will review material and equipment specifications to ensure that the quoted products meet the design specification.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$5,600	\$5,600
Professional & Technical	\$20,000	\$0	\$3,700	\$23,700
Construction	\$80,000	\$0	\$36,100	\$116,100
Total	\$100,000	\$6,400	\$45,400	\$145,400

Based on the cost estimates provided in the application, the budget appears to be sufficient to fund the proposed project. Unit costs used in the development of the estimates of construction are based on historic data for similar work and are reasonable. Specific, reasonable costs were provided for each alternative considered. The application provides justification for the proposed action as the most cost-effective approach. The application justifies the proposed action as the most cost-effective approach.

Water users purchase water from the FBIP at \$24.70 per acre. In total, approximately 5,020 acres are under irrigation. This project will not result in an assessment increase. Matching funds for this project are in the form of In-kind and are dedicated.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no significant adverse long-term impact will result. Minimal short-term environmental concerns associated with the construction phase will be averted using best management practices.

## Funding Recommendation

The DNRC recommends grand funding of \$100,000 upon development and approval of the final scope of work, administration, budget and funding package.

### Project No. 47

Applicant Name	Hardin, City of
Project Name	Water System Improvements
Amount Requested	\$ 100,000
Other Funding Sources	\$ 250,000 Applicant \$1,080,780 SRF \$ 500,000 TSEP \$ 200,000 Coal Board Grant
Total Project Cost	\$2,130,780
Amount Recommended	\$ 100,000

## Project Summary

### Project History

The City of Hardin WTP was constructed in 1920, with some minor improvements made since then. The plant continues to operate with many of the original components. The primary concerns with the plant

include a lack of automation necessary to shut down the plant in the event of significant turbidity, no filter-to-waste system, no backwash pumps, and lack of several types of back-up equipment. The project goal is to increase the overall efficiency and reliability of the Hardin WTP. The proposed project addresses conservation and management of surface water and conservation of energy.

### Technical Approach

Hardin proposes to upgrade the existing WTP to bring the plant into regulatory compliance, to improve automation at the plant for system reliability, and to protect public health and safety. The applicant also considered abandoning the existing plant and constructing a new conventional treatment plant; abandoning the existing plant and constructing a new membrane plant; replacing the filters at the existing plant with membrane filters; and, no action. The project is scheduled to begin construction in August 2012 and be completed by the end of that year. There are no technical issues associated with this project.

Specific tasks to be accomplished:

- Install automated controls of effluent (pipe and automated valves and controls);
- Install filter-to-waste rinse capability (pipe and automated valves and controls);
- Install facilities for automatic sludge removal from sedimentation basins;
- Install back-up power and pump at small booster station;
- Install back-up rapid mix unit and blower;
- Install new backwash pumps with VFD, controls and piping;
- Install new high service pumps with VFDs, controls and piping; and
- Construct new overflow pipe at concrete tank and cathodic protection at steel tank.

### **Resource and Citizen Benefits Analysis**

The proposed project includes both resource conservation and resource management benefits. The upgraded and more efficient WTP will result in conservation of surface water due to less reject and waste streams from the new treatment process. The upgraded plant will also conserve energy. The new, higher efficiency pumps are estimated to conserve approximately 20,260 kWh per year, or approximately \$2,000 in annual energy costs.

Increased plant automation flow meters and controls will result in improved management of a surface water resource. Operators will be better able to optimize and manage the treatment process and significantly decrease the potential to deliver inadequately treated water to the system users.

The project will be coordinated with the Hardin Needs Assessment, CIP, and a growth management plan. The project appears to have strong public support. Hardin held two public hearings, with 18 and 24 citizens in attendance, respectively, to present and discuss the proposed project and grant applications. Participants asked no questions and offered neither comments nor objections to the project. The application included two letters of support and a support petition signed by 22 residents.

### **Project Management**

The application included an adequate project management plan. Hardin will provide experienced staff, professionals, and consultants to manage the project. The city will inform the public through city council meetings and monthly progress mailings with billings. The application included a thorough discussion of contract management. The project will be ready for implementation in the next two years.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$131,323	\$131,323
Professional & Technical	\$0	\$0	\$333,243	\$333,243
Construction	\$100,000	\$0	\$1,566,214	\$1,666,214
Total	\$100,000	\$0	\$2,030,780	\$2,130,780

The city plans to fund the project with a combination of the RRGL, TSEP, and Coal Board grants; an SRF loan; and, city funds. The project budget and funding strategy are reasonable. Hardin has submitted applications for the grants and loan. The PER stated that the city anticipates receiving only half of the \$400,000 Coal Board grant for which it applied. The application discussed provisions for scaling back the project or raising user rates to ensure the project can be implemented, if a source of funding is not obtained. The water system currently serves 1,299 users, including both residential and commercial. The current population of Hardin is estimated to be 3,487. Monthly water user rates will increase from \$25.03 to \$29.54 as a result of the project. The current wastewater system monthly user rate is \$31.05.

## Environmental Evaluation

Other than short-term construction related impacts, the project will not cause significant environmental impacts. The majority of the project will be constructed within the existing WTP facility.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 48

**Applicant Name** Bitter Root Irrigation District  
**Project Name** Siphon 1 Improvement, Phase 2

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 171,025 Applicant  
\$ 777,075 WRDA  
**Total Project Cost** \$1,048,100

**Amount Recommended** \$ 100,000

## Project Summary

### Project History

BRID was organized in 1905. The district consists of about 80 miles of main canal which delivers irrigation water to approximately 16,665 acres of land in the Bitterroot valley. The irrigation water is taken from Como Lake on the west side of the valley and carried to the other side of the valley by a 5,654 foot-long siphon that was constructed in 1909. The district serves 1,350 households, farms, and ranches. This project is the second phase of the total replacement of the siphon. The first phase was completed in fall 2009 and spring 2010. The district has been making temporary and emergency repairs to the siphon for many years.

### Technical Approach

BRID proposes to replace a 750 foot-long section of the siphon with spiral steel welded pipe, which is the same type of pipe used in phase one. New air vents, anchor blocks, and expansion joints will be installed along this section of the siphon. The new pipe will be placed along the same alignment as the replaced



pipe. This approach will minimize excavation and surface disturbance. BRID considered seven alternatives to the proposal, including no action and six different pipe and pipe materials configurations. Four of the alternatives were eliminated because they would not provide enough flow capacity or would not economically withstand the design pressures of the system. The other alternative that was eliminated was a double-barrel HDPE pipe. The HDPE alternative would require two pipes because the pipe is not offered in a size that can deliver 350 cfs.

The proposed start date is July 2011. Final engineering design and construction completion are scheduled by June 2012. This schedule appears to be reasonable.

Specific tasks to be accomplished:

- Select an engineer;
- Complete final design;
- Agency review;
- Advertise for bids and award a construction contract;
- Remove the old section of the siphon;
- Install new pipe;
- Site cleanup; and
- Contract closeout.

### Resource and Citizen Benefits Analysis

This project is the next step in replacing a siphon that is over 100 years old and is at the end of its useful life. The district makes repairs to stop leaks in the pipe annually. There are many visible leaks in this portion of the siphon, but the total leakage has not been measured. If this section of the siphon were to fail, then all of the irrigated acres would be without water until emergency repairs could be made. Failure of this section of the siphon could wash out a portion of U.S. Highway 93, which crosses the pipe, and a branch line of Montana RailLink railroad tracks. Failure also could wash out part of the bank of the Bitterroot River. The damage done to the river bank could have long lasting effects on the fishery in the river, due to sediment washed into the river. The river has a population of bull trout which is listed as a threatened species under the ESA. The project will help to maintain a stable and reliable water supply to 16,665 acres. The Ravalli county commissioners, state representative, Bitter Root Water Forum, Bitter Root RC&D Area, Inc., and the BRID have all expressed support for this project.

This is the second phase of five phases to replace the siphon completely. Phase 1 was completed in spring 2010. Phase 3 is tentatively scheduled for completion in 2014, phase 4 in 2016, and phase 5 in 2018.

### Project Management

The project management plan seems to be adequate. The final engineering design for this phase of the project has been completed and the project is ready for bidding. The applicant plans to complete the final engineering designs for the bridge and pipe crossing of the Bitterroot River (phase 3) as part of this project. The schedule is adequate to complete the project within the next two years.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$12,000	\$12,000
Professional & Technical	\$25,150	\$0	\$115,450	\$140,600
Construction	\$74,850	\$0	\$820,650	\$895,500
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$948,100</b>	<b>\$1,048,100</b>



BRID has committed \$171,025 of its funds for grant administration, design and construction. BRID also has committed \$777,075 in WRDA grant funds for design and construction. The application included a letter from the BRID committing these funds to the project.

### **Environmental Evaluation**

Construction activity will create dust and noise in the immediate construction site area, but steps will be taken to minimize these impacts. The area around the construction area will be reclaimed upon completion of construction.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

#### **Project No. 49**

<b>Applicant Name</b>	North Havre County Water District		
<b>Project Name</b>	Water System Improvements		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$	41,250	Applicant
	\$	180,000	Federal Appropriation
	\$	590,000	TSEP
	\$	125,000	RD Grant
	\$	145,000	RD Loan
<b>Total Project Cost</b>		\$1,181,250	
<b>Amount Recommended</b>	\$	100,000	

### **Project Summary**

#### **Project History**

The North Havre County Water District is a rural water system that provides water service to 28 households with a service population of approximately 90 people. The district, previously served by Fresno Reservoir, has contracted for water service from the NCMRWS. The district was not in compliance with the Clean Water Act requirements at the Fresno Reservoir source. Service from the NCMRWA may not be available until approximately 2020. During the interim, the City of Havre serves the district.

#### **Technical Approach**

The district proposes to construct a 100,000-gallon water storage tank, remodel and expand the pumping station building, install variable frequency water pumps, perform safety updates to the chlorine disinfection system, install 15,480 feet of distribution pipe, replace 45 water service meters, and implement a radio-read water meter system.

The primary goals of the proposed project are to update the high service pumping system, eliminate operator safety hazards, maintain service while meeting the DEQ pressure standards, and reduce demands and encourage conservation through improved and more accurate billing. The project also will install seven branch line meters. Thereby, the district will have the ability to monitor water flows through the distribution system so that high demand areas can be identified. This will help to identify areas where leak repairs or distribution system improvements are needed. The proposed pump station and pipeline improvements will resolve the low pressures resulting from the supply source change. The district considered all reasonable alternatives to meet its needs. The applicant proposes to complete the project funding package by July 2011 and complete project improvements by October 2012.

Specific tasks to be accomplished:

- Update and expand existing pumping station;
- Update high service pumping system and add VFD pumps;
- Complete safety improvements for chlorine disinfection system;
- Install new 100,000-gallon concrete storage tank;
- Install 15,480 linear feet of 3-inch PVC pipe;
- Replace 45 service line meters;
- Install 7 branch line meters; and
- Implementing a radio-read water meter reading system.

### Resource and Citizen Benefits Analysis

The project has quantifiable resource conservation and management benefits. The project will result in conservation benefits through lower energy costs to operate pumping stations. The project will result in overall conservation and better management of the water resource. The project is consistent with the NCMRWA regional service plan. The project received more than a dozen letters of support.

### Project Management

The proposed project involves four funding agencies and will require a significant grant administration effort. The district will manage project activities and funds. The project manager will be responsible for overall project management, compliance with state and federal requirements, other administration tasks, and informing each funding agency of project progress. The district secretary will assist with financial management and disbursements and be responsible for document management and record keeping. The project management plan outlines the duties for the district, project manager, attorney, engineer, and district secretary. The district will also retain the service of a professional grant manager. This should provide for a good staff of specialists to perform duties important to the project within their respective areas of expertise. The district will continue to inform the public through regularly scheduled board meetings and newsletters. The project management plan provides for contract management with regulatory and funding agencies, consultants, contractors, and other involved parties. The district has allocated an adequate budget for grant administration of the project. The project budget includes funding to support the financial and administrative aspects of the project. The project should be completed within the proposed project schedule.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$60,450	\$60,450
Professional & Technical	\$40,000	\$0	\$215,300	\$255,300
Construction	\$60,000	\$0	\$805,500	\$865,500
Total	\$100,000	\$0	\$1,081,250	\$1,181,250

The project budget is complete and includes adequate detail to show that the proposed budget is sufficient to complete the proposed project. The district and the proposed project are eligible for all of the funding sources in the proposed funding strategy. If the district is successful with its funding applications, the entire funding package will be in place and the project will be ready to proceed. The applicant is a branch of local government and has the ability to collect charges for debt and operation. The projected residential water rate is \$178.94 per month. This rate includes the debt service for this project and the O&M costs. The new rate will affect 45 households. Cost estimates were provided for the options considered for each of the project components and were used to help determine preferred alternatives. Cost estimates are reasonable and adequate.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term construction-related impacts will be controlled through permitting and proper construction practices.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 50

<b>Applicant Name</b>	Roundup, City of
<b>Project Name</b>	Musselshell Watershed Sustainable Irrigation Management Program
<b>Amount Requested</b>	\$ 97,800
<b>Other Funding Sources</b>	\$ 15,150 Applicant
<b>Total Project Cost</b>	\$ 112,950
<b>Amount Recommended</b>	\$ 60,000

## Project Summary

### Project History

The MWC formed to address concerns related to the chronically de-watered Musselshell River basin. The DBWUA formed its first advisory committee when the Musselshell basin was declared a chronically dewatered stream under the Montana Water Measurement Program Act of 1991. In 1994, the DBWUA and the WUA approved the first reservoir storage agreement. In subsequent years, the various water users groups formed the MWC, to include all stakeholder groups within the Musselshell River basin.

The MWC is a unique achievement in the region because it includes many different political jurisdictions, special purpose districts, and water users groups. The basin spans five eastern Montana counties, five CD's, and various water user groups. The basin includes 280 miles of river channel that irrigates nearly 80,000 acres and supplies municipal water.

### Technical Approach

The purpose of the project is to develop and implement cooperative management of the water resources in the Musselshell River watershed. The project will establish a toolkit to inventory describe, analyze, and prioritize water management activities on the Musselshell River.

The project is comprised of three separate tasks. Task 1 is the irrigation infrastructure inventory and GIS database development. It includes the collection of irrigation infrastructure data and further development of a GIS database user interface that is accessible to all water user groups. Task 2 is the purchase and installation of three measuring devices on primary storage and distribution infrastructure to achieve consistent and accurate measurement of water use, and to inform the timely and appropriate delivery of water among storage facilities and water users. Task 3 provides funding for a facilitator to provide a consensus-driven process to guide decisions relevant to the interests of all water users.

The applicant analyzed the selected alternative and the no action alternative. The short-term costs of the no action alternative would be less than that of the preferred alternative. The long-term costs of the no action alternative would be considerably more, because decisions would be made with less than accurate and timely information and data and there would be a lack of an effective method for establishing



priorities for future infrastructure enhancements and maintenance. The project is slated to begin in July 2011 and will be closed out by July 2012.

Specific tasks to be accomplished:

- Irrigation infrastructure inventory and GIS database development
- Purchase and installation of three measuring devices, and
- Procurement of a facilitator to establish a consensus driven process to guide decisions relevant to the interests of all members of the MWC.

### **Resource and Citizen Benefits Analysis**

The proposed project will measurably conserve water by the installation of measurement devices. Surface water will be better managed by providing accurate and timely information to Musselshell water users and managers allowing them to coordinate the prioritization of infrastructure improvement decisions and thereby increase the efficiency of storage and delivery of water to all water in the Musselshell. Improved management of surface water will benefit irrigated acres, preserve farmland, conserve fisheries and recreation, and assure municipalities of an adequate drinking water supply. The application received strong public support and will enhance public participation in future water management decisions.

### **Project Management**

Project administration will be provided by the coordinator of the Central Montana RC&D, who has experience in administration of grants. The project facilitator will provide quarterly reports to the project administrator. The facilitator will be responsible for all inter-group communications, meeting agendas and coordination. All meetings of the MWC and the Central Montana RC&D program are publically noticed through area newspapers and websites and meetings are open to the public.

### **Financial Assessment**

<b>Budget Item</b>	<b>RRGL Grant</b>	<b>RRGL Loan</b>	<b>Match</b>	<b>Total</b>
<b>Administration</b>	\$1,000	\$0	\$6,250	<b>\$7,250</b>
<b>Professional &amp; Technical</b>	\$57,800	\$0	\$0	<b>\$57,800</b>
<b>Construction</b>	\$39,000	\$0	\$8,900	<b>\$47,900</b>
<b>Total</b>	<b>\$97,800</b>	<b>\$0</b>	<b>\$10,150</b>	<b>\$112,950</b>

The budget appears reasonable and adequate to fund the project. The applicant provided a breakdown of the costs. A DNRC planning grant that has already been acquired and in-kind services from the RC&D provide match funding. The project will serve over 80,000 acres and 225 farms or ranches.

### **Environmental Evaluation**

Environmental impacts associated with this project were evaluated and no apparent adverse, long-term impacts will result.

### **Funding Recommendation**

The DNRC recommends grant funding of \$60,000 upon development and approval of the final scope of work, administration, budget and funding package.



## Project No. 51

<b>Applicant Name</b>	Montana Department of Natural Resources and Conservation Water Resources Division
<b>Project Name</b>	Clark Fork River Basin Task Force
<b>Amount Requested</b>	\$ 72,000
<b>Other Funding Sources</b>	\$ 16,738 Applicant
<b>Total Project Cost</b>	\$ 88,738
<b>Amount Recommended</b>	\$ 32,000

### **Project Summary**

#### Project History

The Clark Fork River Basin Task Force is an entity which is directed by statute, 85-2-350(3), MCA, to complete the following tasks for the Clark Fork River Basin: identify and solve water management issues; identify basin water resource data gaps; coordinate water management by local basin watershed groups; provide a forum for water issues; advise government agencies about water management and permitting activities; and, consult with local and tribal governments and make recommendations, if necessary, to the DNRC for consideration as amendments to the state water plan.

#### Technical Approach

DNRC proposes to fund the work of the Clark Fork River Basin Task Force during FY 2012 and FY 2013 with an RRGL grant. In addition to the proposal, DNRC considered no action, seeking a legislative appropriation to support the Task Force budget, seeking private funding to support the Task Force budget, and DNRC funding to support the Task Force budget. Given the projected budget deficit for the 2011 biennium, a legislative appropriation seemed unrealistic. Because the Task Force and its duties are defined by statute, it seemed inappropriate to expect a private entity to fund the Task Force. DNRC faces budget cuts for the biennium and, likewise, is unable to fund the Task Force.

Specific tasks to be accomplished:

- Fulfill the Task Force statutory duties;
- Pursue implementation of the Hungry Horse initiative;
- Develop a work plan for revision of the Clark Fork Basin Watershed Management Plan, August, 2004;
- Revise the Clark Fork Basin Watershed Management Plan, August, 2004; and
- Make recommendations to the DNRC for revising the Clark Fork River Basin section of the state water plan.

### **Resource and Citizen Benefits Analysis**

Funding the Clark Fork River Basin Task Force would provide information to support improved management of water resources within the Clark Fork River Basin and, potentially, result in an agreement with the USBR to lease water from Hungry Horse Reservoir. The benefits associated with this project include conservation, management, development and preservation of Clark Fork River Basin water resources by revising and implementing the Clark Fork Basin chapter of the state water plan including: updating watershed profiles in each of its six watersheds, completing the Hungry Horse initiative, protecting the security of water rights in the basin, developing options for the orderly development of water in the basin, developing options for conserving water in the basin, and drought planning.

The project could benefit economic development in Montana by providing a source of water for future use from Hungry Horse Reservoir. No water has been reserved within the basin for future use and hydropower water rights at the bottom of the basin are likely to constrain the legal availability of water for new appropriations.

The Clark Fork River Basin Task Force is a statutory entity, created in part to develop and update the Clark Fork Basin chapter of the state water plan and coordinate with on-going water conservation. The Task Force helps in the management of both surface and groundwater within the basin, provides education and information on those resources, and promotes public input with multiple public meetings and conferences.

### **Project Management**

DNRC and the Task Force have well-established capacity to manage the project. DNRC and the Task Force have worked together since the Task Force was authorized in 2001. DNRC acts as the fiscal agent for the Task Force and disburses its funds. Staff from the DNRC WRD, serve as liaisons between the department and the Task Force. DNRC has recommended reduced grant funding to eliminate the contracted facilitator position.

The Task Force has on-going statutory duties, thus the project will begin immediately upon funding. Public participation is enabled through Task Force monthly public meetings and Task Fork volunteer members consult with the groups they represent including local governments, basin water interests, watershed groups, water user organizations, and individual water users. The Task Force also provides meeting minutes and other publications to the public through the DNRC WRD web page.

### **Financial Assessment**

<b>Budget Item</b>	<b>RRGL Grant</b>	<b>RRGL Loan</b>	<b>Match</b>	<b>Total</b>
<b>Administration</b>	\$0	\$0	\$0	<b>\$0</b>
<b>Professional &amp; Technical</b>	\$72,000	\$0	\$16,738	<b>\$88,738</b>
<b>Construction</b>	\$0	\$0	\$0	<b>\$0</b>
<b>Total</b>	<b>\$72,000</b>	<b>\$0</b>	<b>\$16,738</b>	<b>\$88,738</b>

The two year budget for the Task Force is \$88,738, or \$44,369 per year. DNRC intends to provide \$16,738 to fund the project and requests an additional \$72,000 in RRGL grant funds. The budget includes \$40,000 for facilitation services, which could be provided by DNRC staff. Thus, DNRC recommends an award of \$32,000 to fund conferences, publications, meeting expenses, Task Force member mileage and per diem, and technical contracted services. The technical contracted services are estimated at \$10,000 over two years.

DNRC has no ability to assess fees for this project and the number of users of the final product is undefined. DNRC is budgeting \$16,738 in matching funds and no backup plan was discussed in the case the grant is not awarded.

### **Environmental Evaluation**

The proposed project will have a net positive effect on the environment. Benefits center on better management of surface and ground water resources, updates to the state water plan and water for future use through the Hungry Horse Dam initiative.

### **Funding Recommendation**

The DNRC recommends grant funding of \$32,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## Project No. 52

<b>Applicant Name</b>	Green Mountain Conservation District		
<b>Project Name</b>	Tuscor Creek Restoration		
<b>Amount Requested</b>	\$	84,778	
<b>Other Funding Sources</b>	\$	3,690	Applicant
	\$	4,000	FWP
	\$	15,000	Sanders County RAC
	\$	25,000	Avista
	\$	1,540	Lower Clark Fork Watershed Group
<b>Total Project Cost</b>	\$	134,010	
<b>Amount Recommended</b>	\$	84,778	

### **Project Summary**

#### Project History

GMCD proposes to improve water quality and fish habitat in Tuscor Creek, a tributary to the Clark Fork River in Sanders County. Historic fires and past land management practices resulted in the removal of vegetation and large woody debris along the stream and floodplain. The loss of plants and large logs has caused the stream and floodplain to become unstable. The upper reach of Tuscor Creek on the Page Ranch is currently eroding at an estimated rate of 953 tons per year from 36 distinct sites within a 4,600-foot length of stream. The channel is deeply incised and virtually devoid of stabilizing vegetation. Restoration work will include constructing a series of step pools to reduce headcutting and erosion and implementing an aggressive revegetation and bioengineering effort to restore 2.8 acres of floodplain/riparian corridor. The goals of the project are to reduce soil erosion by 80%, create a stable stream channel and banks, establish a functioning floodplain, and provide a vegetated riparian area. Achieving these goals will improve water quality and fish habitat.

#### Technical Approach

In addition to the proposed action, the applicant considered no action; complete reconstruction of the channel and revegetation of the floodplain in its current location, including step-pool grade controls to arrest upstream erosion; and, relocation of the stream to an historic, abandoned channel with only limited re-vegetation.

The applicant selected partial stabilization of the channel with bioengineering, installation of step-pool grade controls and re-vegetation of riparian and floodplain because this approach was the least costly and least intrusive. Given the unstable nature of the Tuscor Creek, the proposed action was also identified as the highest risk approach, but this concern was not addressed in selecting an alternative. The application also did not include any performance criteria (for example, design grade controls for 100-year flow, design floodplain for 20-year flow) to ensure the project does not wash out. Construction of the project will start in 2011 and be completed in 2012, with three years of monitoring to occur from 2011 to 2013.

Specific tasks to be accomplished:

- Undertake project management, administer project funds, and select contractor(s) for project management, design, and installation;
- Complete on-site surveys, prepare final design plans, and secure permits;
- Construct step-pool grade controls, install bioengineering bank stabilization structures, and plant riparian vegetation;
- Monitor fish populations, bank and channel stability, installed vegetation; and,
- Evaluate project success, write completion reports, and prepare educational materials.



## Resource and Citizen Benefits Analysis

The project is multi-purpose and will preserve surface water quality in Tuscor Creek by stabilizing 762 tons of soil that erode into the stream each year. Consequently, soil long used for agriculture will be conserved, having the added benefit of preserving family farmland. Re-vegetation for the entire length of the floodplain on both sides of the stream will increase stream bank vegetation and riparian forest and, thereby, conserve floodplain habitat for wildlife.

The project will develop fisheries by improving water quality and instream habitat. The project focuses on westslope cutthroat trout, a state species of special concern. Fish populations are predicted to increase by a minimum of 25%. The actual increase may be greater.

GMCD is coordinating this project with the Clark Fork Settlement Agreement and a statewide management effort for westslope cutthroat trout. The results of project monitoring will be made public and lessons learned will be shared with agencies and conservation groups. This will help to advance the understanding of riparian revegetation in stabilizing stream channels. FWP, the Kootenai National Forest, Avista Corporation, Lower Clark Fork Watershed Group, and two landowners submitted letters of support for this project.

## Project Management

The project has a well-thought out management plan. Currently, the project is in the funding stage, with contractor selection, design, and permitting to begin as soon as funds are secured. An open procurement process that meets state requirements will be followed. Construction is scheduled to begin in 2011 and will be completed in 2012. GMCD monthly meetings will provide a forum for public input and discussion about the project. Final results of the project will be communicated through the local news media, GMCD meetings, Lower Clark Fork Watershed Group meetings, meetings of the Avista Management Committee, and the newsletters and/or websites of TAC members, and other local agencies and organizations.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$16,958	\$0	\$0	\$16,958
Professional & Technical	\$10,170	\$0	\$14,412	\$24,582
Construction	\$57,650	\$0	\$34,820	\$92,470
Total	\$84,778	\$0	\$49,232	\$134,010

The projected costs are reasonable, given the level of planning and design completed to date. No contingency was included in the estimates to cover unanticipated expenses. In addition, no alternative funding plan was offered in the event any of the proposed funding sources do not participate. The applicant has secured \$19,500 in matching RAC funding for the project.

## Environmental Evaluation

The project will have significant environmental benefits and no adverse environmental impacts.

## Funding Recommendation

The DNRC recommends grant funding of \$84,778 if the applicant provides assurances the project will not wash out under reasonably anticipated flows and upon development and approval of the final scope of work, administration, budget, and funding package.



## Project No. 53

<b>Applicant Name</b>	Lewistown, City of	
<b>Project Name</b>	East Fork Dam Repair	
<b>Amount Requested</b>	\$ 100,000	
<b>Other Funding Sources</b>	\$ 20,005	Applicant
	\$ 65,000	NRCS
<b>Total Project Cost</b>	\$ 185,005	
<b>Amount Recommended</b>	\$ 100,000	

### **Project Summary**

#### Project History

East Fork Dam impounds water in the East Fork Reservoir, upstream from Lewistown. The 60-foot tall dam was built for flood control and recreational purposes in 1974 by the Soil Conservation Service (NRCS) and is owned and managed by Lewistown. The lower-level outlet control gate was found to be inoperable in 2000 and is stuck in the closed position due to a broken connection on the operator stem. The design called for one-inch diameter pins at the stem joints. Instead, ½-inch to 5/8-inch diameter pins were used. The other outlets on the dam are the principal spillway and emergency spillway. The project will repair the lower level outlet gate operator stem so that the dam can return to full design function.

### **Technical Approach**

The applicant proposes to hire divers to install a pneumatic plug in the lower level outlet entrance, open the gate and remove the stem, drain the reservoir, and repair and reinstall the stem. Other proposed work includes earthwork to remove sediment and/or debris at the head of the lower level outlet; obtain necessary permits and monitor and maintain downstream flows within permitted levels; and, technical and administrative support.

The applicant considered several alternatives, including no action; breaching the dam; constructing cofferdams and dewatering a portion of the reservoir to gain access to and repair the lower level outlet structure and then make the necessary repairs; and, the proposed action, hiring divers to open the lower level outlet gate, dewater the entire reservoir, and then make the necessary repairs. The project schedule includes pre-construction tasks for 2010 and construction between July and October 2011. Concerns with the project include the technical feasibility of using divers to open the slide gate which has not been operated for at least ten years, the difficulty of ensuring sealing of the pneumatic plug for diver safety, possible damage to the fishery by draining of the reservoir, and possible highly-altered downstream flows. The applicant very briefly evaluated the other alternatives.

#### Specific tasks to be accomplished:

- Mobilize and demobilize city staff and equipment;
- Install temporary pneumatic plug in the principal spillway outlet;
- Open the slide gate;
- Remove the plug in principal spillway outlet pipe;
- Drain the reservoir;
- Excavate sediment from around principal spillway inlet structure;
- Install new connection pins in the operator stem couplers;
- Reinstall and re-oil operator stem; and
- Monitor and maintain stream flow during all construction phases.

## Resource and Citizen Benefits Analysis

The project has several resource, safety, and economic benefits. Repair of the gate operator will restore outlet operation capabilities to design intent, ensuring flood control, protection of downstream residents, land, and businesses, and will protect the downstream channels from resource-damaging high flows.

The project will benefit critical habitat for aquatic and terrestrial species by reducing high flow and low flow occurrences. Fish habitat will specifically benefit by maintenance of required flows.

The reservoir also serves as a source of fire-protection water and repair of the stem will help to ensure that fire-protection water is available in the future. Repair of the stem will further benefit the public and the economy of Montana by preserving habitat for fishing, hunting, and general recreation. The project has support from several state and local agencies, including the DNRC, FWP, Fergus County Disaster and Emergency Services, Lewistown Area Chamber of Commerce, TU, Big Spring Creek Watershed Council, and the Central Montana Resource Conservation & Development Area.

## Project Management

The project is not yet ready for construction but, given the scope, it would be feasible for the 2011 construction season. The NRCS will be the engineer of record on the project. Lewistown will manage the project and the city will consult with a qualified firm for necessary engineering inputs. City staff will do much of the work, such as repair of the gate stem. The application is somewhat unclear about the stem repair, however, because the application infers that the repair work will be both contracted to a machine shop and performed by Lewistown staff. FWP and TU - Snowy Mountain Chapter will assist with public involvement.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$6,922	\$0	\$5,837	\$12,759
Professional & Technical	\$10,367	\$0	\$8,771	\$19,138
Construction	\$82,711	\$0	\$70,397	\$153,108
Total	\$100,000	\$0	\$85,005	\$185,005

The proposed budget is appropriate, if not somewhat excessive. Actual construction costs may be considerably lower than estimated. The cost estimate includes more than 100 hours by the diving contractor, at a rate of \$300 per hour, but did not include further supporting information to document the number of hours required for that work. Diving involves uncertainty, but the estimate of 100 hours might be high. The budget also includes 40 hours, at a rate of \$550 per hour, for heavy equipment to excavate and remove sediment from around the principal spillway inlet structure. The application did not include soundings or estimates of the volume of sediment at the inlet. A volume estimate would have allowed for a more accurate estimate of the heavy equipment time required. Despite the limitations in the cost estimates, the proposal is likely the least costly approach to repair the operator stem. NRCS and Lewistown, together, have committed \$85,005 to the project. The application does not mention a backup plan for the project if RRGL funding is not available.

## Environmental Evaluation

Continued flood protection and drought management will be environmental benefits of this project. Long-term surface water quality and quantity will be improved because the operation of the lower level outlet will help to remove peaks and lows in the downstream stream flow. In the short term, water quality and quantity may be negatively impacted during construction. The application states that necessary permits will be obtained for the project. Overall, aquatic and terrestrial species habitat will be improved. The environmental evaluation did not mention very serious potential for fish mortality and species transportation resulting from drawdown of the reservoir.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 54

<b>Applicant Name</b>	Crow Tribe of Indians	
<b>Project Name</b>	Crow Agency Water System Improvements, Phase 4A	
<b>Amount Requested</b>	\$	100,000
<b>Other Funding Sources</b>	\$	5,500 Applicant
	\$	750,000 TSEP
	\$	400,000 STAG WRDA
	\$	650,000 EPA Tribal Set-Aside
	\$	199,500 Coal Board Grant
	\$	1,100,000 HUD Indian CDBG Grant
<b>Total Project Cost</b>		\$3,205,000
<b>Amount Recommended</b>	\$	100,000

## Project Summary

### Project History

The community of Crow Agency is served by two WTP's which pull raw water from the Little Bighorn River. One plant, owned and operated by the BIA, was constructed in 1965. The other plant, owned and operated by the Crow Tribe, was constructed in 1978. Both treatment plants have significant deficiencies and a 2008 PER recommended the construction of a new treatment plant to serve the community. The two existing plants would be decommissioned. The construction of a new treatment plant is proposed as a future phase. In 2008, the EPA issued an administrative order requiring the Crow Tribe to either begin long-term monitoring for *Cryptosporidium* or provide maximum treatment to comply with the Long Term Enhanced Surface Water Treatment Rule by October 2014. The Crow Agency water distribution system was constructed around 1911 and has numerous deficiencies including undersized and leaking water mains, as well as dead-end lines. Portions of the distribution system were replaced in the past two years. This project proposes to replace additional portions of the leaking distribution system.

### Technical Approach

The 2008 PER detailed a number of treatment alternatives that addressed deficiencies in both the BIA and Tribal plants. The PER recommended construction of a new, conventional water treatment facility and determined that facility to be the most pressing need in the water system. The proposed new WTP did not include additional treatment for the removal of *Cryptosporidium* due to the uncertain nature of source water testing. Additional testing has since been completed and a 2010 amendment to the PER indicated that *Cryptosporidium* is likely a real and pressing threat to community health. This change has caused a reordering of priorities. The capital costs to construct a new treatment facility are estimated at



over \$12 million and represent a significant cost to the rate payers in Crow Agency. The Crow Tribe is committed to pursuing the funding needed to construct a new treatment plant. The Tribe recognizes that it will likely take several years to obtain the total funding package necessary to construct a new plant. The poor source water quality presents a serious and immediate threat to public health. Construction of a new UV disinfection facility will reduce the public health threat and allow the community to comply with EPA regulations.

Leakage in the distribution system is significant and the Crow Tribe proposes to replace approximately 8,000 lineal feet, or nearly 20% of the distribution system. This will result in the measurable conservation of water and will reduce flows withdrawn from the Little Bighorn River, which will provide a benefit to the plants and animals that rely on adequate water flows in the river. The proposed project is financially feasible and is the first step in addressing the most significant public health and safety issues in the water system. The implementation schedule is reasonable and includes finalization of financing in November 2011, design in early 2012, and construction during summer 2012.

Specific tasks to be accomplished:

- Install a UV disinfection system; and
- Replace 8,000 lineal feet of distribution system.

### Resource and Citizen Benefits Analysis

The project has quantifiable resource conservation and preservation benefits. The replacement of portions of the leaking distribution system will conserve water and energy, as well as preserve the fish and wildlife habitat in the river through increased instream flows.

### Project Management

The proposed project involves six funding agencies and will require a significant grant administration effort. The Crow Tribe proposes to coordinate grant administration among a grant administrator, the financial officer, and the engineer. The grant administrator will inform each funding agency of project progress. The project management plan outlines the duties for the project manager, engineer, financial officer, grant administrator, and attorney. The plan provides for a good staff of specialists to perform duties important to the project and within their respective areas of expertise. The Crow Tribe will continue to inform the public through regularly scheduled board meetings and newsletters. The project management plan provides for contract management with regulatory and funding agencies, consultants, contractors, and other involved parties. The project budget includes funding to support the financial and administrative aspects of the project.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$0	\$0
Professional & Technical	\$0	\$0	\$519,000	\$519,000
Construction	\$100,000	\$0	\$2,586,000	\$2,686,000
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$3,105,000</b>	<b>\$3,205,000</b>

The project budget is complete and includes adequate detail to show that the proposed budget is sufficient to complete the proposed project. The Crow Tribe and the proposed project are eligible for all of the funding sources in the proposed funding strategy. If the Crow Tribe is successful with its funding applications, the entire funding package will be in place and the project will be ready to proceed. The applicant is a local government and has the ability to collect charges for debt and operation. The projected residential water and sewer rate is \$92.64 per month. The Crow Tribe proposes to charge users a flat rate of \$45.00 per month. The Crow Tribe is committed to keeping the system affordable to the user, by paying the difference each month out of its general fund. Cost estimates were provided for



the options considered for each of the project components and were used to help determine preferred alternatives. Cost estimates are conservative and adequate.

### **Environmental Evaluation**

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal, short-term construction-related impacts will be controlled through permitting and proper construction practices. No significant environmental impacts were discovered in the analysis and the project will have a net positive impact on the environment through a reduction of withdrawals from the river.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### **Project No. 55**

<b>Applicant Name</b>	Hill County Water District		
<b>Project Name</b>	Water System Improvements		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$	271,304	Applicant
	\$	180,000	Federal Appropriation
	\$	750,000	TSEP
	\$	<u>270,554</u>	SRF
<b>Total Project Cost</b>		\$1,571,858	
<b>Amount Recommended</b>	\$	100,000	

### **Project Summary**

#### **Project History**

The Hill County Water District is a water service provider to six small towns and 13 rural water districts. The district serves a population of approximately 2,100 people. The district was previously served by Fresno Reservoir, with the Marias River as the backup source. The district was not in compliance with the Clean Water Act requirements at the Fresno Reservoir source. To meet water quality requirements, the district would have had to install a WTP at the Fresno Reservoir source. Instead, the district elected to join the NCMRWA to resolve the water supply issues. Service from the NCMRWA may not be available until approximately 2020. As an interim solution, the district has abandoned the Fresno Reservoir source and converted to full time use of the Marias River source. The water supply from the Marias River source has met the non-filtration waiver requirements for surface water supplies and is approved for use, up to a maximum pumping rate of 430 gpd.

The district has been operating with the Marias River source for nearly two years. Demands on the water system have exceeded the source capacity maximum limit on one occasion. The district now must take active steps to manage water use so that the system does not exceed the capacity of the source. If that were to happen, the district would lose the non-filtration waiver for the system water supply. Loss of the non-filtration waiver would require the district to construct a WTP to serve the district until the NCMRWA water system can provide service.

#### **Technical Approach**

The Hill County Water District proposes to replace 702 water service meters, install key-operated bulk water fill stations, implement an automated water meter reading system to replace self-reporting,

construct 13,000 feet of 12-inch water main, install a by-pass and pressure reducing valve at the Hingham pump station, implement chlorine treatment room improvements, and install generator receptacles to provide emergency power capabilities at all system pump stations. The applicant considered all reasonable alternatives to this proposal.

The primary project goal is to reduce water demands to ensure that the district does not violate the Marias River non-filtration waiver and may continue to use the Marias River source. A second goal is to improve water pressures in those portions of the system in which pressures were reduced as a result of the conversion to full time use of the Marias River source. Updating service meters and implementing an automated water meter reading system will reduce demand and encourage conservation through improved and more accurate billing. The project will include branch line meters to provide the district with the ability to monitor water flows through the distribution system so that leaks can be located and repaired.

The completed project will result in energy conservation, through lower energy costs for operating the system, and will allow the district to more efficiently manage a valuable natural resource. No technical concerns have been raised with implementation and completion of the proposed project. The applicant proposes to complete the project funding package by July 2011 and complete project improvements by October 2012.

Specific tasks to be accomplished:

- Replace 702 service line meters;
- Install 14 branch line meters;
- Implement an automated water meter reading system;
- Install 13,000 linear feet of 12-inch PVC pipe;
- Install a by-pass and pressure reducing valve at the Hingham pump station;
- Implement chlorine treatment room improvements; and
- Install generator receptacles to provide emergency power capabilities at all system pump stations.

### **Resource and Citizen Benefits Analysis**

The project has quantifiable resource conservation and management benefits. The project will result in conservation benefits through lower energy costs. The project will result in overall conservation and better management of the water resource. The project is consistent with the NCMRWA regional service plan. The project received 32 letters of support.

### **Project Management**

The proposed project involves four funding agencies and will require a significant grant administration effort. The district will manage project activities and funds. The project manager will be responsible for overall project management, compliance with state and federal requirements, other administration tasks, and informing each funding agency of project progress. The district secretary will be responsible for document management and record keeping. The project management plan outlines the duties for the district, project manager, attorney, engineer, and district secretary. The district will also retain the service of a professional grant manager. The plan should provide for a good staff of specialists to perform duties important to the project within their respective areas of expertise. The district will continue to inform the public through regularly scheduled board meetings and newsletters. The project management plan provides for contract management with regulatory and funding agencies, consultants, contractors, and other involved parties. The district has allocated an adequate budget for grant administration.. The project budget includes funding to support the financial and administrative aspects of the project. The project should be completed within the proposed project schedule.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$75,470	\$75,470
Professional & Technical	\$40,000	\$0	\$211,750	\$251,750
Construction	\$60,000	\$0	\$1,184,818	\$1,244,818
Total	\$100,000	\$0	\$1,472,038	\$1,571,858

The project budget is complete and includes adequate detail to show that the proposed budget is sufficient to complete the proposed project. The district and the proposed project are eligible for all of the funding sources in the proposed funding strategy. If the district is successful with its funding applications, the entire funding package will be in place and the project will be ready to proceed. The applicant is a branch of local government and has the ability to collect charges for debt and operation. The projected residential water rate is \$40.00 per month. This rate includes the debt service for this project and the O&M costs. The new rate will affect 630 households.

Cost estimates were provided for the options considered for each of the project components and were used to help determine preferred alternatives. Cost estimates are reasonable and adequate.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term construction-related impacts will be controlled through permitting and proper construction practices.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 56

Applicant Name	Roundup, City of
Project Name	Water System Improvements
Amount Requested	\$ 100,000
Other Funding Sources	\$ 210,000 Applicant
	\$ 500,000 TSEP
	\$ 450,000 CDBG
Total Project Cost	\$1,260,000
Amount Recommended	\$ 100,000

## Project Summary

### Project History

The original water distribution system for the City of Roundup was installed in 1908. The system consists of more than 48,000 feet of cast iron pipe. The 100-year-old pipe is badly deteriorated and city personnel repair an average of two to three leaks per month. There is more than an inch of rust and scaling inside the pipe walls and the pipes are hydraulically inadequate. More than half of the 100-year-old valves on the original system are inoperable.

The city water supply consists of two wells which are then piped to an infiltration gallery beside the Musselshell River that is no longer used as a water supply. This infiltration gallery functions as a clearwell for water distribution booster pumps. The gallery leaks 84,000 gallons of chlorinated water per



day to the groundwater, adjacent to the river. The transmission line from the wells to the clearwell crosses the Musselshell River and is not reliable. The water quality is very poor, but suitable for drinking water until a better source becomes available. This project will not address the water quality issue.

### Technical Approach

Roundup proposes to bypass the clearwell with new transmission line from the source wells direction into the distribution system; replace approximately 4,300 feet of four-inch cast iron mains with eight-inch PVC water mains; and, install a new chlorination system to replace the clearwell system. The PER evaluated the existing water system and several alternatives to address the problems with the water system. The PER identified the preferred alternative as an eight or nine phase project and recommended specific capital improvements to complete the first phase. The proposed project will implement the first phase of improvements.

Although this project will not address the water quality issue, these capital improvements will improve the functionality and reliability of the existing water system. Design is anticipated to begin in early 2011. Construction will be completed during 2012.

Specific tasks to be accomplished:

- Complete design and construction engineering for the project;
- Replace the transmission and river crossing from the wells to the distribution system, bypassing the existing leaking clearwell and booster pumps;
- Replace approximately 4,300 feet of four-inch cast iron water mains with eight-inch PVC mains; and
- Install a new chlorination system and new pumps in the well house.

### **Resource and Citizen Benefits Analysis**

The proposed project will conserve approximately 84,000 gpd of groundwater that currently leaks from the clearwell. Decommissioning the clearwell will also protect surface water quality in the nearby Musselshell River. Bypassing the existing booster pumps at the clearwell will conserve energy. Upgrading the water mains will eliminate leaks, conserve water, protect public health and safety, and promote economic development.

### **Project Management**

The proposed project management plan is adequate. Roundup will contract for grant administration and project management. The city has contracted with an on-call engineer, in accordance with state procurement standards, whom they may retain to perform the grant administration, design, supervise bidding and contractor procurement, and supervise construction. The city may also choose to contract with a different engineer. The city will procure construction services in accordance with state procurement standards. The city has contracted with a grant administrator who will manage the grant and loan funds in accordance with the grant requirements. The project design is anticipated to be completed in 2011 and construction is anticipated during 2012.

### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$58,500	\$58,500
Professional & Technical	\$0	\$0	\$212,000	\$212,000
Construction	\$100,000	\$0	\$889,500	\$989,500
Total	\$100,000	\$0	\$1,160,000	\$1,260,000

Roundup serves 708 residential users and a total use of 1,068 EDU. The current combined-systems rate is \$51.94 per month, 117% of the target rate, per EDU. For that reason, the proposed funding consists of



grant funding and cash reserves and would result in no increase in user rates. Roundup will pay for project design from cash reserves. If the city receives only partial grant funding, the city could apply for an SRF loan. If the city funds the project with only cash reserves and an SRF loan, the combined-systems monthly rate would increase from \$51.94 to \$57.39, or to 129% of the target rate. While these rate increases would not be desirable, the project is feasible if grant funding is not fully awarded.

### **Environmental Evaluation**

The proposed project will remove the leaking clearwell and questionable river crossing from service and, thereby, conserve groundwater and protect water quality in the Musselshell River. Most of the construction work is proposed along existing streets or roads and construction will not contribute to increased environmental impacts. Improvements within the Musselshell River floodplain will require permitting. Disturbances will be minimized by directional boring beneath the river and adjacent wetlands.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

#### **Project No. 57**

<b>Applicant Name</b>	Kevin, Town of		
<b>Project Name</b>	Water System Improvements, Phase 3		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$	300,000	USBR
	\$	300,000	CDBG
<b>Total Project Cost</b>	\$	700,000	
<b>Amount Recommended</b>	\$	100,000	

### **Project Summary**

#### **Project History**

Kevin is a very small community of about 200 residents located 20 miles south of the U.S. and Canada border in north central Montana. Kevin began as a thriving oil production and railroad community in the early 1900s, but has seen tough economic times for the past 40 years. The system serving Kevin provides water to only 118 customers. The water system is physically very large and costly to maintain. Kevin has experienced serious water shortage problems in the past because of limited source production and an aging, leaking cast iron transmission main. Kevin has agreed to connect to the North Central MRWS when it becomes available. In the interim, Kevin must provide its own water.

The source rehabilitation and treatment improvements were mandated by the DEQ and the town is under a consent agreement and compliance schedule to complete these improvements.

#### **Technical Approach**

The PER conducted in 2007 recommended repairing the existing storage tank to extend its service life. During the design stage, it was determined that rehabilitation of the storage tank was cost prohibitive and construction of a new storage tank was deemed a better alternative. Unfortunately, by implementing this alternative, funds for replacing the failing portion of the transmission main would not be available. The transmission main is a 4-inch diameter cast iron pipe that is more than 60 years old. Portions of this main have been replaced over the years, but approximately 3.25 miles of this original line are still in service. This section of line is failing and experiences severe leakage. Portions of this main are located beneath a

feedlot and are subject to contamination. The leakage from this line further stresses the insufficient water supply. Replacement of these sections of the transmission is imperative to minimize water losses.

Kevin is constructing a new water chlorination structure to address public health and safety issues, as mandated by DEQ. This structure must be built near the water sources to benefit the entire system and the only acceptable location with year-round access is approximately five miles from Kevin, more than one-half mile from the nearest electrical power line. The cost to extend electrical power to this location far exceeds what is available in the project budget. Therefore, Kevin explored alternative energy sources to serve this facility and proposes to use a combination of wind-, solar- and propane powered energy sources instead of electric utility power.

The proposed project is financially feasible and addresses the most significant needs remaining in the water system. The implementation schedule is reasonable and includes finalization of financing in July 2011, design in late 2011, and construction during summer 2012.

Specific tasks to be accomplished:

- Replace 12,000 lineal feet of transmission main; and
- Install a combination of wind, solar, and propane powered energy sources for the new chlorination building.

### Resource and Citizen Benefits Analysis

The project has quantifiable resource conservation benefits. The replacement of the leaking transmission main will result in conservation of both water and energy. Use of an alternative source will also conserve energy. The project is consistent with the Kevin capital improvement plan and growth policy and well supported through multiple letters from the residents.

### Project Management

The proposed project involves three funding agencies and will require a significant grant administration effort. Kevin proposes to coordinate grant administration between the city clerk and engineer. The engineer will be responsible to inform each funding agency of project progress. The project management plan outlines the duties for the mayor, engineer, attorney, and clerk-treasurer. This provides for a good staff of specialists to perform duties important to the project within their respective areas of expertise. Kevin will continue to inform the public through regularly scheduled council meetings. The project management plan provides for contract management with regulatory and funding agencies, consultants, contractors, and other involved parties. Kevin has allocated an adequate budget for grant administration of the project. The project budget includes funding to support the financial and administrative aspects of the project.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$6,000	\$0	\$12,000	\$18,000
Professional & Technical	\$29,000	\$0	\$71,260	\$100,260
Construction	\$65,000	\$0	\$516,740	\$581,740
Total	\$100,000	\$0	\$600,000	\$700,000

The project budget is complete and includes adequate detail to show that the proposed budget is sufficient to complete the proposed project. Kevin and the proposed project are eligible for all of the funding sources in the proposed funding strategy. If the town is successful with its funding applications, the entire funding package will be in place and the project will be ready to proceed. The applicant is a local government and has the ability to collect charges for debt and operation. The projected residential water and sewer rate is \$46.79 per month. This proposed rate is 120% of the DOC target rate, which indicates the project is affordable for residents. Cost estimates were provided for the options considered

for each of the project components and were used to help determine preferred alternatives. Cost estimates are reasonable and adequate.

### **Environmental Evaluation**

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term construction-related impacts will be controlled through permitting and proper construction practices. No significant environmental impacts were discovered in the analysis

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

#### **Project No. 58**

<b>Applicant Name</b>	LaCasa Grande Water and Sewer District
<b>Project Name</b>	Wastewater Improvements

<b>Amount Requested</b>	\$ 100,000	
<b>Other Funding Sources</b>	\$ 15,000	Applicant
<b>TSEP Grant</b>	\$ 750,000	TSEP
<b>DOC-TC</b>	\$ 15,000	DOC Project Planning Grant
<b>SRF Loan</b>	<u>\$ 972,600</u>	SRF
<b>Total Project Cost</b>	\$1,852,642	

<b>Amount Recommended</b>	\$ 100,000
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### **Project Summary**

#### **Project History**

The Lacasa Grande subdivision was developed in 1974 and comprises 157 residential homes (160 at full build out) on 113 acres and is served by a community water system and individual, on-site subsurface drain fields. Since 1976, 14 of the systems have experienced failure and approximately 11 other homes have insufficient lot area to replace their systems in the event of failure. The TMDL framework study of the Lake Helena watershed demonstrated that on-site septic systems in the Helena Valley are the leading cause of nitrogen contamination in Prickly Pear Creek and Lake Helena. Prickly Pear Creek is characterized as impaired in the state water quality standards.

#### **Technical Approach**

The LaCasa Grande WSD proposes to provide a new, conventional gravity collection system, a dual-pump submersible lift station for conveyance to the East Helena wastewater treatment facility and eliminate all existing on-site septic systems. The PER thoroughly analyzed several alternatives including no action, aerated lagoons with spray irrigation, facultative lagoons with total retention, recirculating sand filter with discharge to groundwater, MBR with surface water disposal to Prickly Pear Creek, and the proposed project. Hooking into the East Helena wastewater treatment facility is the appropriate engineering solution. The PER addressed the necessary planning and engineering required to comply with federal and state wastewater system regulations and the requirements of the Montana Water Quality Act. Use of an existing treatment facility will improve efficiency of plant O&M and eliminate duplication of infrastructure and human resources.

The schedule identified approval of all funding sources by July 2011, project design and approval from July 2011 to January 2012, advertising for construction bids in March 2012, and construction of the



project in the summer and fall 2012. This is a fairly large project for one construction season and any delay might result in project completion in 2013.

Specific tasks to be accomplished:

- Install approximately 13,700 lineal feet of new eight-inch PVC collection pipe and 37 manholes;
- Install approximately 15,300 lineal feet of four-inch PVC service piping;
- Construct a dual pump submersible lift station with controls and back-up power generation; and
- Install 2,600 lineal feet of four-inch forcemain piping to the East Helena treatment facility.

### Resource and Citizen Benefits Analysis

This project will eliminate discharge to groundwater and the associated nutrient loading from 157 residential drainfields. Thus, the project will help to restore the water quality in Prickly Pear Creek and the Lake Helena aquifer and protect the groundwater for down-gradient users and the aquatic habitat in Lake Helena. The discharge of approximately 54,000 gpd of treated wastewater into Prickly Pear Creek will help conserve the fisheries and riparian habitat by reducing the incidence and severity of seasonal de-watering due to irrigation and low run-off. However, the water rights on Prickly Pear Creek exceed the actual flows. Although the discharge of treated wastewater will supplement flows, the low flow regime in Prickly Pear Creek likely will continue.

### Project Management

The district has previous experience managing and administering grant-funded projects. The district also has contracted, following state procurement procedures, for professional services to assist with project administration. The project timeline is optimistic, but completion within the next two years is feasible. The public involvement plan includes legally advertised meetings and public hearings for the debt election to fund the project. District newsletters will inform the district members of events throughout construction.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$79,000	<b>\$79,000</b>
Professional & Technical	\$83,800	\$0	\$111,500	<b>\$195,300</b>
Construction	\$16,200	\$0	\$1,562,142	<b>\$1,578,342</b>
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$1,752,642</b>	<b>\$1,852,642</b>

A TSEP grant and an SRF loan are the primary funding sources for the proposed budget. An income study will be available in September 2010. If the survey demonstrates that more than half of the residents are low and middle income, the district will apply for a CDBG grant in the amount of \$386,500 and reduce the SRF loan accordingly. The district has the ability to assess fees and the rate increase will go through the process defined in district by-laws. The user rate will be either \$64.45 per month or \$81.67 per month, depending on the award of the CDBG grant. Either rate would be a significant increase because there is no current charge for sewer service. The TSEP grant will not be awarded until 2011 and success of that application is not known. If the TSEP grant application is unsuccessful, the project likely would be delayed and the district would reapply in 2012.



## Environmental Evaluation

The project will reduce the volume of primary treated wastewater into the groundwater aquifer and, eventually, into the surface waters of the Lake Helena watershed. Potentially adverse impacts resulting from solid waste management and wastewater treatment would be minor.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 59

<b>Applicant Name</b>	Whitefish, City of
<b>Project Name</b>	Haskill Basin Watershed Conservation and Preservation
<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 56,900 Applicant
<b>Total Project Cost</b>	\$ 156,900
<b>Amount Recommended</b>	\$ 100,000

## Project Summary

### Project History

Haskill Basin, located north of Whitefish, in Flathead County, consists of 8,281 acres of timbered, agricultural, and residential land. The City of Whitefish diverts a major portion of its water supply from the headwaters of Haskill Creek in Haskill Basin. The Work Progress Administration (WPA) constructed a water collection and delivery system during the 1930s to provide a source of drinking water for the community of Whitefish. The system consists of three diversion dams, inlet structures, and about two miles of clay tile pipeline. During the 1970s, one of the diversions was abandoned and, during the 1980s, the clay tile pipe was replaced with PVC pipe. The remaining two diversions and inlets are in serious need of improvements. The air release valves along the pipeline leak and also are in need of replacement.

### Technical Approach

The Haskill Basin Watershed Council was established in 2000 with a mission "to maintain and enhance the chemical, biological, and physical integrity of Haskill Creek by a voluntary and cooperative effort." The proposed project will help preserve the existing system and compliment the council's efforts to preserve the Haskill Creek Watershed.

Specific tasks to be accomplished:

- Replace access walkways at each of two diversion dams;
- Modify the diversion dam on Second Creek by adding a second slidegate and outlet in the dam;
- Modify the gate operators and handwheels at each of the two diversion dams;
- Remove sediment, provide streambank riprap, and install energy dissipaters in Second Creek to prevent erosion above the diversion;
- Make structural improvements, including covers at each of the two inlets; and
- Replace leaking air release valves along the transmission line to conserve diverted water.

## Resource and Citizen Benefits Analysis

This project will benefit the surface waters of Haskill Creek, the westslope cutthroat trout fishery that inhabits Haskill Creek and its tributaries, and an existing infrastructure system that supplies water to the

City of Whitefish. Indirect benefits, such as recreation and wildlife habitat preservation, will also be enhanced by efforts to preserve Haskill Basin.

The purpose of the project is to preserve and manage a watershed and public water supply by improving the existing infrastructure. The project will benefit Haskill Creek by reducing pipeline leakage and, subsequently, the volume of water diverted from the stream. Streambank stabilization and the removal of sediment will improve water quality. Additionally, improvements at each of two diversions will provide safe access and public safety.

The diversion dams, inlet structures, and water transmission pipeline are located within Haskill Basin, an 8,281-acre area immediately north of Whitefish. The land is partially timbered and is both residential and agricultural in use. This project will augment efforts by the local community and the Haskill Basin Watershed Council to preserve the area and the public benefits it provides. It will also ensure the integrity of a major drinking water supply for the City of Whitefish.

### **Project Management**

The City of Whitefish will manage this project. Engineering services will be performed by a consultant, procured in accordance with Montana statute. The public has been involved in efforts to preserve water quality in Haskill Creek and to protect the entire watershed. Public involvement will continue to be an important component of this and other projects to enhance and protect the remaining natural features of Haskill Basin, including Haskill Creek. Design and construction of the project is scheduled for the summer and fall 2011.

### **Financial Assessment**

<b>Budget Item</b>	<b>RRGL Grant</b>	<b>RRGL Loan</b>	<b>Match</b>	<b>Total</b>
<b>Administration</b>	\$0	\$0	\$5,700	<b>\$5,700</b>
<b>Professional &amp; Technical</b>	\$0	\$0	\$25,700	<b>\$25,700</b>
<b>Construction</b>	\$100,000	\$0	\$25,500	<b>\$125,500</b>
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$56,900</b>	<b>\$156,900</b>

In addition to the RRGL grant being requested with this application, the budget for the proposed project includes a \$56,900 cash and in-kind services commitment by the City of Whitefish. Whitefish charges its water customers based on actual metered usage. The average residential water rate is \$54.25 and the average residential sewer rate is \$42.58, for a combined average monthly utility charge of \$96.83.

### **Environmental Evaluation**

Other than temporary impacts during construction, the environmental impacts associated with this project will be beneficial. Long-term impacts include the enhancement of an existing infrastructure that supplies water to Whitefish, the preservation of a small stream and its westslope cutthroat trout population, and the preservation of an 8,281-acre watershed adjacent to a community that, during the last 10 years, has experienced the effects of unprecedented growth and development.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## Project No. 60

**Applicant Name** Ravalli County  
**Project Name** LiDAR Mapping for Flood Hazard Identification, Phase 3

**Amount Requested** \$ 75,000  
**Other Funding Sources** \$ 6,816 Applicant  
**Total Project Cost** \$ 81,479

**Amount Recommended** \$ 75,000

### **Project Summary**

#### Project History

This project is the final phase of a three-phase project to complete LiDAR mapping and identify flood-prone areas in Ravalli County. The proposed project area is 66 square miles. This includes lands along the mainstream of the Bitterroot River, south of Darby, and covers both the East and West Forks of the Bitterroot River. LiDAR technology will provide accurate digital topographic data to identify flood hazards and enhance Ravalli County manage water resources. The objective of the project is to obtain elevation data. The county will use the information to ensure accuracy and support fair administration of county planning and permitting responsibilities including subdivision review, groundwater monitoring, wastewater permit review, and land use planning designations.

#### Technical Approach

LiDAR technology was selected as the preferred alternative to obtain accurate elevation data because it is accurate, easy to implement, relatively inexpensive, and provides valuable data products. LiDAR technology mapping is a relatively new technology in topographic data collection that uses a "shot-gun pattern" of laser transmissions from an aircraft. Data from this project will be used to develop watershed maps of Ravalli County and to support resource planning decisions. The county also considered ground surveying, radar mapping and no action. Ground survey techniques are labor intensive and costly. Radar mapping would only provide five-foot contour intervals at a reduced horizontal and vertical accuracy. Radar technology does not work well in areas of dense vegetation, like that found along riparian corridors and forest lands. LiDAR technology is more cost effective and can provide the detail needed to produce accurate, two-foot contour interval maps. No action would result in status quo and no additional accurate topographic data would be collected.

The proposed project is scheduled to begin with contractor selection in July 2011 and data gathering in September 2011. Completion is scheduled for December 2011. LiDAR data must be collected during "leaf off, no snow" conditions. Early snow in the valley could flex the data acquisition schedule to begin in spring 2012 and adjust completion.

#### Specific tasks to be accomplished:

- Select contractor in accordance with state procurement procedures;
- Mobilize aircraft with LiDAR equipment, calibrate equipment; and, establish a survey ground control;
- Acquire data by flying overlapping transects;
- Process raw data into a digital elevation model that meets or exceeds all FEMA accuracy standards for two foot contours; and
- Package a final product and distribute deliverables to Ravalli County.



## Resource and Citizen Benefits Analysis

The data collected in this project will be used to generate a comprehensive and accurate topographic map for managing developmental pressure in Ravalli County and protecting the Bitterroot watershed and its ecosystem. The primary benefits of this project include the ability to produce accurate floodplain maps, to identify vulnerable water resources, and to protect environments associated with the Bitterroot River and its tributaries. Accurate, quantifiable, and defensible topographic data will enable the county to enforce natural resource management decisions and enhance the natural water resources of the region through management practices.

The project will benefit citizens and natural resources through the development and use of tools that use the new, accurate data to guide land use decisions. Improved management and preservation of floodplains and management of fisheries and wildlife will result from prudent application of LiDAR data. Several state and local government agencies and non-profit organizations submitted letters of support for this project.

## Project Management

The project management team is the same team responsible for the successful implementation of the first and second phases of this project, both of which were funded with RRGL grants. The team consists of a floodplain administrator responsible for grant administration and overall project management, a GIS director for technical guidance, and a planning director responsible for project review. The team is adequate and experienced. The project management plan identified duties for each member of the management team. Ravalli County will continue to notify the public of the status of the LiDAR mapping project and hold the requisite public meetings in the course of arriving at and implementing land use planning decisions. The project will be coordinated with several state and federal agencies to ensure that data obtained from this project will be available for incorporation into the following programs:

- DNRC Floodplain Program and Dam Safety Program;
- FEMA Floodplain Map Modernization Program;
- NRCS Soil Survey;
- Ravalli County Environmental Health Septic Suitability models;
- USFS LiDAR mapping projects; and
- Montana Natural Heritage Program's mapping of riparian areas and wetlands.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$6,816	\$6,816
Professional & Technical	\$74,663.00	\$0	\$0	\$74,663
Construction	\$0	\$0	\$0	\$0
Total	\$74,663.00	\$0	\$6,816	\$81,479

The applicant documented project costs based on LiDAR contractor estimates to survey approximately 66 square miles. It is recommended that LiDAR flight activities be coordinated with adjacent counties to lower costs. Ravalli County will perform all administrative duties and assume associated costs. RRGL grant money will be used for professional and technical costs only. Alternative costs would have been \$4,254,000 for a ground survey or \$31,620 for radar mapping. The applicant requested more funds than the budget indicates.

## Environmental Evaluation

No adverse environmental impacts will result from completion of this project. Potential environmental benefits resulting from implementing data collected in this project include the identification and protection of important riparian and environmentally sensitive areas; improved fire fuel hazard mapping to assist in identifying and mitigating wild land fire hazards; improved floodplain hazard mapping to protect



floodplains and determine flood risks; improved surface water quality and decrease the negative impacts of stormwater runoff; provide vegetation mapping to update and protect wetlands and designate riparian buffer zones to improve and protect aquatic habitat and terrestrial wildlife species; improve water quality in Ravalli County through the maintenance of intact floodplains that provide important groundwater filtration and recharge; provide topographic data beneficial to the planning and construction of developments in suitable areas and capital improvement plans (CIP); provide the county with critical data related to planning, ordinance enforcement, subdivision approval, zoning conformance, sanitation permits, and environmental protection; and, provide important information for landowners, developers, contractors, and municipalities in regard to location, design, and construction of on-site wastewater treatment systems and in identifying surface water drainage patterns.

### **Funding Recommendation**

The DNRC recommends grant funding of \$75,000 upon development and approval of the final scope of work, administration, budget, and funding package.

#### **Project No. 61**

<b>Applicant Name</b>	Lockwood Water and Sewer District		
<b>Project Name</b>	Wastewater Collection System Improvements		
<b>Amount Requested</b>	\$	100,000	DNRC Grant
<b>Other Funding Sources</b>	\$	750,000	TSEP
	\$	400,000	STAG/WRDA
		<u>\$15,836,000</u>	SRF
<b>Total Project Cost</b>		\$17,086,000	
<b>Amount Recommended</b>	\$	100,000	

### **Project Summary**

#### **Project History**

The Lockwood WSD serves approximately 3,200 households in the rural community of Lockwood. Both the residential and commercial areas have used on-site wastewater systems for many years. As a result, groundwater nitrate levels are high, septic systems on small lots have failed and cannot be replaced, and new construction requires complex and expensive on-site systems.

The Lockwood WSD intends to construct a gravity sewer collection system and pump stations in two phases and then connect to the City of Billings WWTP. Billings will treat and dispose of the wastewater on a long-term contractual basis. Phase 1, which includes construction of the major trunk lines, pump stations, and the Yellowstone River crossings to the Billings treatment facility, is in progress, with completion expected in 2011.

#### **Technical Approach**

The district proposes to complete phase 2 of the project, which includes construction of the interceptor and the residential sewers necessary to connect all customers to the system. The PER evaluated a variety of alternatives to provide sewer service to the phase 2 areas. These included alternatives to establish sewer service in the shortest possible timeframe and longer implementation schedules in the event that limited funding is initially available. The PER also evaluated street routing, alley routing, and the use of pump stations. All alternatives would provide gravity sewers to Lockwood commercial and residential neighborhoods.

The amount of the SRF loan required to fund this proposal might be difficult to obtain during one funding cycle. The PER anticipated this concern and outlined a schedule for incremental implementation that would span five project cycles and extend up to 10 years.

Specific tasks to be accomplished:

- Extend approximately 150,000 feet of new sewers to affected areas enabling service to 1,207 customers;
- Connect these sewers to the main trunk line; and
- Engineering and construction of the proposed project.

### Resource and Citizen Benefits Analysis

Completion of both phases will end the use of decentralized wastewater treatment systems in Lockwood. Ultimately, 3,200 households and commercial establishments will benefit from reliable sewer service. Improved sewer service might facilitate increased business and commercial activity in the area.

The project will preserve groundwater by the elimination of sewage and, in particular, nitrate contamination. The project will also eliminate potential drain field discharges to the Yellowstone River and, thereby, protect water quality.

### Project Management

The proposed project management plan is adequate. The district has a board of directors, holds regular meetings, and will employ certified staff, as appropriate. In accordance with state procurement standards, the district has contracted with a project engineer and grant coordinator who will perform the design, supervise bidding and contractor procurement, and supervise construction. Because phase 1 is under construction now, both the district and the engineer have extensive recent experience. The project can be designed and ready for construction by 2012, depending upon the time necessary to secure the other funding.

### Financial Assessment

Budget Item	RRGL Grant	RRG Loan	Match	Total
Administration	\$100,000	\$0	\$36,000	\$136,000
Professional & Technical	\$0	\$0	\$2,716,000	\$2,716,000
Construction	\$0	\$0	\$14,234,000	\$14,234,000
Total	\$100,000	\$0	\$16,986,000	\$17,086,000

The total project cost is approximately \$17 million with most of the funding provided by SRF loans. The district should know the availability of all funding, except the STAG/WRDA grant, by the end of 2010. Award of the STAG/WRDA grant is unlikely, but those funds are not critical to the success of the project. The critical factor for project success is the availability of SRF loan funds. The overall project plan correctly anticipated that incremental implementation might be necessary to avoid unrealistic applications for SRF loans. In the event of a funding shortfall, the applicant has developed a schedule for incremental implementation that will align construction with available funds.

The estimated sewer rate will be about \$81 per month and combined rate for water and sewer will be about \$111 per month. This rate is high when compared with other Montana communities. Therefore, the community qualifies for the full TSEP grant amount of \$750,000. The district has already made a major project commitment through construction of phase 1.

## Environmental Evaluation

This project will preserve the groundwater resource and likely protect the surface waters of the Yellowstone River. Much of the proposed construction will occur within already disturbed and developed areas. Negative environmental impacts will be short term and related to construction.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 62

<b>Applicant Name</b>	Teton Conservation District
<b>Project Name</b>	Eureka Reservoir Improvements
<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	<u>\$ 174,800</u> Applicant
<b>Total Project Cost</b>	\$ 274,800
<b>Amount Recommended</b>	\$ 100,000

## Project Summary

### Project History

The Eureka Reservoir was constructed in 1936 and holds 5,500 acre-feet of water that is used to irrigate 6,000 acres of farmland around Choteau. Local residents also use the reservoir for fishing and water related recreation throughout the summer. Recent dam inspections have identified substantial problems with the 36-inch outlet pipe and seepage under the dam. These problems pose serious threats to the integrity of the dam, increasing the potential for dam failure. The applicant has developed a plan to rehabilitate the dam in two phases. Phase 1 would include replacement of the outlet works. Phase 2 would include seepage abatement measures and toe stabilization.

### Technical Approach

The applicant proposes to replace the existing outlet works with a new 36-inch CMP outlet pipe, a gate, and a new chimney drain. The dam will be breached and cut to remove the existing piping and gate structure. The new outlet pipe will be replaced with a new gate control system. A chimney drain will also be installed in the embankment to mitigate any potential piping that might occur through the embankment. Installation of the new outlet works will prevent seepage loss through the outlet works; help stabilize the dam; and, allow for improved control and management of the reservoir.

The applicant proposes to use CMP material that does not meet current DNRC Dam Safety Standards. This issue was raised by DNRC staff and must be addressed during the permitting and design phases of the rehabilitation. Rehabilitation of the outlet works should also include the installation of a reinforced concrete discharge pipe, as recommended by DNRC staff and the technical reviewer.

The applicant also evaluated rehabilitation of the outlet works through slip lining of the 36-inch CMP discharge pipe. This alternative was not selected because it would cause reduction in the discharge pipe. The smaller discharge pipe would reduce flow capacity into the TCCC Main Canal which already experiences water shortages during dry years.

The application provided detailed cost estimates for phase 1 of the rehabilitation which included a 15% contingency to protect against price increases. Because the project budget was based on the use of



CMP pipe, it is likely that the cost of construction will be higher than the original estimate provided in the application. The applicant indicated that TCCC would absorb any cost overruns.

Specific tasks to be accomplished:

- Grant administration and project set up;
- Final design and development of construction plans;
- Installation of new outlet pipe;
- Installation of new outlet works;
- Dam rehabilitation; and
- Project close out.

## Resource and Citizen Benefits Analysis

Implementation of phase 1 rehabilitation measures will eliminate water losses through the outlet works, provide measures to control reservoir levels, and promote conservation and the efficient and beneficial use of the water resource. The improvements will preserve integrity of the Eureka Dam and ensure continued use of the reservoir for agriculture and recreation. The reservoir is a heavily used recreational facility for the residents of Choteau and Teton County during the summer. The reservoir also provides substantial fish and wildlife habitat. Preservation of this facility will benefit the local economy, especially the Town of Choteau.

## Project Management

The TCCC will contract an engineering firm to develop the final design and construction documents and to provide construction oversight. The engineering firm will also act as the project manager and grant administrator for TCCC. The engineering firm will have experience in working with and administering grant funded projects. TCCC will provide limited assistance with grant administration and act as the final authority on all major decisions pertaining to the project. Upon grant award, TCCC will collect data to facilitate completion of the final design and construction.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$2,500	<b>\$2,500</b>
Professional & Technical	\$10,000	\$0	\$66,855	<b>\$76,855</b>
Construction	\$90,000	\$0	\$105,445	<b>\$195,445</b>
Total	<b>\$100,000</b>	<b>\$0</b>	<b>\$174,800</b>	<b>\$274,800</b>

The applicant requested \$100,000 in grant funding to implement phase 1 of the dam rehabilitation. The applicant intends to fund the balance of phase 1 with a low interest loan in the amount of \$174,800. The estimated engineering fees for phase 1 appear to be unreasonably high, accounting for almost 40% of the construction cost.

TCCC may not be able to fund phase 2 of the rehabilitation after it incurs the debt required to finance phase 1. Assuming a 4% loan rate over 20 years on \$174,800, water rates would increase by an average increase \$2.13 per acre. This rate and the additional increase required to finance phase 2 would be a substantial increase over the current rate. The project will serve 22 irrigators and 6,000 acres and will provide recreation for the local community.



## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term environmental impacts include noise, dust, and vegetative disturbance and can be mitigated by using best management practices.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 63

<b>Applicant Name</b>	East Helena, City of		
<b>Project Name</b>	Wastewater System Improvements		
<b>Amount Requested</b>	\$ 100,000		
<b>Other Funding Sources</b>	\$ 750,000	TSEP	
	\$2,385,444	RD Loan	
	<u>\$1,845,608</u>	RD Grant	
<b>Total Project Cost</b>	\$5,081,052		
<b>Amount Recommended</b>	\$ 100,000		

## Project Summary

### Project History

The East Helena wastewater system serves 2,114 persons in 907 households. Approximately 1,760 lineal feet of sewer main serving the north side of the city have insufficient capacity to handle flows during pool filter backwash. Six stormwater catch basins connect directly into the sanitary sewer system on Main Street. During precipitation and runoff events, these catch basins introduce significant quantities of clear and cold water to the sanitary sewer system and the treatment plant, adversely affecting the plant's treatment capabilities. The DEQ issued East Helena a new Montana Pollutant Discharge Elimination system permit in October 2009. The permit contains more stringent limitations for copper, lead, zinc, and nutrients. Compliance with these limitations must be achieved by January 2013.

### Technical Approach

The applicant evaluated a no action and two action alternatives for the existing 10-inch sewer; a no action and one action alternative for the Main Street storm drain; and, a no action and three action alternatives for metals removal. The screening process was reasonable except that more consideration should have been given to the pipe-bursting alternative for the 10-inch sewer. The cost analysis was thorough. The determination of capital requirements, costs for O&M, salvage, and net present worth are all well supported.

The project proposes to replace the 1,760 feet of 10-inch diameter VCP with 15-inch PVC sewer main; construct approximately 4,250 lineal feet of storm drain pipe and 33 inlets; and, add a new reactive filtration unit process at the wastewater plant to remove metals.

Specific tasks to be accomplished:

- Replace 1,760 lineal feet of 10-inch diameter VCP sanitary sewer with 15-inch PVC through open-trench installation;
- Install approximately 4,250 lineal feet of 12-inch to 24-inch PVC storm piping within Main Street and Morton Avenue;
- Conduct pilot testing to determine performance characteristics of sulfide precipitation versus reactive filtration for metals removal; and
- Construct a full-scale unit process at the city's wastewater facility.

### Resource and Citizen Benefits Analysis

The primary natural resource benefits will be preservation of surface water quality in Prickly Pear Creek through reduction of metals discharges from the WWTP and proper treatment of stormwater; preservation of groundwater through enhanced capacity and the ability to connect surrounding un-sewered areas; and, preservation of the fishery in Prickly Pear Creek.

### Project Management

The project management plan is thorough and well-structured. There is a reasonable system of check and balances to control the flow of funds to and from the applicant and to its consultants. Staff requirements/responsibilities, procurement requirements, coordination, public involvement and consultant management are all reasonably addressed

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$267,623	\$267,623
Professional & Technical	\$50,000	\$0	\$577,839	\$627,839
Construction	\$50,000	\$0	\$4,135,591	\$4,185,591
Total	\$100,000	\$0	\$4,981,052	\$5,081,052

With the anticipated funding package of TSEP, DNRC, RD loan and RD grant, the expected sewer rate will increase from \$38.92 per month to \$57.45 per month and the combined water and sewer rate will be 156% of the calculated target rate, of which the city residents have been apprised of. All 907 households within the city boundary will be affected by the sewer rate increase. The funding package appears reasonable and the city's candidacy for the TSEP and RRGL grants and RD funding programs is confirmed. Without the \$100,000 DNRC RRGL grant, it is likely that the city could possibly see and increase in the RD grant amount. With the high relative rates, it is not likely that RD could increase the loan amount. Cost estimates for the recommended solution are reasonable and well described.

### Environmental Evaluation

Except for the short term, construction-related disturbances, the overall environmental impact of the entire project package will be beneficial. Prickly Pear Creek will benefit from lower copper, lead and zinc discharges from WWTP and reduced pollutants coming from Main Street runoff.

### Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## **Project No. 64**

<b>Applicant Name</b>	Missoula County
<b>Project Name</b>	Spring Meadows Sewer
<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 15,000 Applicant
	\$ 500,000 TSEP
	\$ 15,000 TSEP Planning Grant
	<u>\$ 417,783</u> SRF
<b>Total Project Cost</b>	\$1,047,783
<b>Amount Recommended</b>	\$ 100,000

### **Project Summary**

#### **Project History**

Groundwater nitrate levels in the Wye, O'Keefe Creek, and Spring Meadows area of Missoula County have steadily increased over the past 15 years. In recent years, drinking water samples from the area show groundwater nitrate levels exceeding the maximum contaminant level (MCL) of 10 mg/l, as set by the EPA for drinking water and by the State of Montana for groundwater.

In 2008, the Missoula City-County and the Missoula Valley Water Quality District completed a study on elevated nitrates in the Wye and O'Keefe Creek area to determine nitrate sources. The study identified on-site septic systems in the Spring Meadows drainage as the likely source of nitrates causing the water quality violations.

Missoula County has worked for many years to remedy the high nitrate problems in this area. Wye Area Sanitary Sewer RSID 8489 was formed in 2008 to extend City of Missoula sewer facilities to the larger Wye area. This allowed residents and businesses in the area to connect to city sewer. It also allowed the county to focus more specifically on the water quality problems in the Spring Meadows drainage. Three major sources of nitrates were identified in this drainage: the Williams Addition community drainfield, two community drainfields for Jim and Mary's RV Park, and 60 individual drainfields in the Spring Meadows Addition.

The Williams Addition was the first component of the Spring Meadows drainage to be addressed. Williams Addition Sewer RSID 8497 connected 41 lots to City of Missoula sewer and abandoned the large, community drainfield. Soon after, Jim & Mary's RV Park connected to city sewer and eliminated two community drainfields. Now, Missoula County proposes to complete the project by connecting the Spring Meadows Addition eliminating its individual drainfields.

#### **Technical Approach**

Missoula County evaluated several alternatives for this project. A variety of alternatives were explored for this project. No action is not an option because the local aquifer is a designated sole source drinking water aquifer. Nitrate contamination exceeds the applicable standards.

The PER evaluated a community treatment system and drain field with groundwater discharge. This alternative was eliminated from consideration because it would be difficult to permit the discharge from such a system. A mechanical type WWTP's was eliminated due to the high cost, the small user base, and difficulty in permitting. Total evaporation and spray irrigation were also eliminated from consideration due limited availability and high cost of land for ponds.

The PER determined that ultimate discharge to the City of Missoula wastewater treatment facility was preferable and evaluated several options for doing so based on relative cost effectiveness, technical



feasibility, environmental impact, and land requirements. The proposed project will extend the Missoula gravity sewer and connect all residences in the Spring Meadow Addition. Missoula will operate and maintain the new sewers.

Specific tasks to be accomplished:

- Complete engineering and design for the proposed project;
- Install 4,500 feet of eight-inch gravity sewer main and connection to regional sewer;
- Install 2,000 feet of four-inch sewer service connections; and
- Install 21 manholes.

### Resource and Citizen Benefits Analysis

This project will eliminate decentralized wastewater treatment systems in the Spring Meadows Addition. About 60 households will ultimately benefit from reliable sewer service. The project will preserve groundwater resources by eliminating nitrate and other sewage contamination. The project will also eliminate potential drain field discharge to the Clark Fork River.

### Project Management

The proposed project management plan is adequate. Missoula County has adequate administrative and technical expertise to manage the project. The City of Missoula will maintain the completed sewer system as it does for other nearby service areas. In accordance with state procurement standards, the county has procured a project engineer who will perform the design, supervise bidding and contractor procurement, and supervise construction. Missoula County has assigned a grant coordinator to manage the project finances. The project easily can be designed and ready for construction either in 2011 or 2012, depending upon the time necessary to complete the other requested funding cycles. Construction can be completed in one year.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$106,929	\$106,929
Professional & Technical	\$0	\$0	\$155,635	\$155,635
Construction	\$100,000	\$0	\$685,219	\$785,219
Total	\$100,000	\$0	\$947,783	\$1,047,783

Missoula County has contributed \$15,000 in local planning grant matching funds to the project. In addition to the RRGL grant, the county proposes to fund the balance of the project with the combination of an SRF loan and a TSEP grant.

The estimated sewer only user rate initially will be about \$44 per month and will increase to about \$56 per month after the users connect to the regional sewer system, with the additional \$12 per month assessed to pay for O&M. The combined water and sewer rate will be \$106 per month, increasing to about \$120 per month. An additional connection fee is estimated at \$6,000 per lot and will be incurred when the service is connected. Compared with other Montana communities in similar situations, these costs appear high. The connection fee may be burdensome for some residents.

Since this application was submitted to the DNRC, the local Spring Meadows Water District has sent a letter objecting to the project. The district president stated in his letter that local residents are now in protest against this project due to the high costs.



## Environmental Evaluation

This project would preserve the local groundwater resource which is a sole source drinking water aquifer. The surface waters of the Clark Fork would also be preserved because of reduced nutrients discharges. Negative environmental impacts will be short-term and construction related. Overall, the project will have a long-term positive environmental impact on local drinking water supplies.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 65

<b>Applicant Name</b>	Missoula County Office of Planning and Grants
<b>Project Name</b>	Missoula County LiDAR Mapping

<b>Amount Requested</b>	\$ 50,000
<b>Other Funding Sources</b>	\$ <u>4,306</u> Applicant
<b>Total Project Cost</b>	\$ 54,306

<b>Amount Recommended</b>	\$ 50,000
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## Project Summary

### Project History

Missoula County has experienced rapid population growth and expects to experience some of the highest development pressures in the state. The ability for the local governing body to make responsible development decisions near streams and other water resources is limited by the lack of accurate elevation data. This project will map approximately 7,000 acres of Missoula County, including portions of the Bitterroot, Clearwater and Swan River valleys. The Swan and Clearwater Rivers are ranked as the two highest priorities in the state by the Floodplain Management Section of the DNRC WRD. The project goal is to use LiDAR elevation data to develop more accurate floodplain maps. The information would be used to guide future development decisions, in order to conserve and protect the floodplain areas.

### Technical Approach

LiDAR technology was selected as the preferred method to obtain accurate elevation data based on its accuracy, ease of implementation, cost, and its ability to provide valuable data products. LiDAR technology mapping is a relatively new technology in topographic data collection that uses a "shot-gun pattern" of laser transmissions from an aircraft. This technology produces maps with extreme accuracy at 2-foot contours for relatively little cost. The topographic data are stored in digital format and will be used to develop watershed maps and to support resource planning decisions. The applicant also considered ground surveying, aerial photogrammetry, and no action. Ground survey techniques are labor intensive and costly. Aerial photogrammetry is less expensive but less accurate. The no action alternative would not address the need for accurate topographical data.

The proposed project is scheduled to begin with contractor selection in July 2011 and data gathering in November 2011. Project completion is scheduled for June 2012. LiDAR data must be collected during "leaf off, no snow" conditions. Early snow in the valley could revise the data acquisition schedule to begin in November 2011 and adjust completion to April 2012.

Specific tasks to be accomplished:

- Select contractor, in compliance with state procurement procedures;
- Perform ground surveys to establish points of reference for LiDAR flight and relocate plane and equipment to Missoula County for data acquisition;
- Calibrate LiDAR equipment in Missoula County for local conditions and finalize flight planning;
- Fly area to acquire data by making systematic overlapping swaths along identified flight paths;
- Process data to create surface models, contour maps, vegetation maps and planimetric maps from raw LiDAR data;
- Develop and deliver final product to Missoula County that documents process and contains deliverables per the final contract;
- Coordinate with the DNRC Floodplain Management Section and the Montana State Library to place data onto the NRIS website; and
- Disseminate data to interested parties (to include the DNRC, FEMA, Flathead Lake Biological Station, the Missoula County CD, area surveyors and environmental consultants, interested government officials, research and citizen groups).

### Resource and Citizen Benefits Analysis

The data collected in this project will be used to generate a comprehensive and accurate topographic map for managing developmental pressure in Missoula County and protecting the Bitterroot, Clearwater and Swan watersheds and ecosystems through management practices. Primary benefits of this project include accurately locating floodplains, identifying vulnerable water resources, and environmental protection for flood prone areas. Accurate, quantifiable, and defensible topographic data will enable the county to enforce natural resource management decisions and enhance the natural water resource and floodplains of the region through management practices.

The results from this project will be shared with interested parties, including the DNRC, FEMA, Flathead Lake Biological Station, the Missoula County CD, area surveyors and environmental consultants, interested government officials, research, and citizen groups. The project will benefit citizens and natural resources through the development and use of tools that use the new, accurate data to guide land use decisions. Improved management and preservation of floodplains and management of fisheries and wildlife will result from prudent application of LiDAR data. Several state, local government agencies and non-profit organizations submitted letters of support for this project.

### Project Management

The proposed project management plan is adequate to complete the project within the two year timeframe. The project is well planned and coordinated with state and federal agencies to ensure that data will be available to interested parties. Specifically, the project will be coordinated for compatibility with existing LiDAR mapping projects in Lake and Ravalli counties.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$2,357	\$0	\$4,306	\$6,663
Professional & Technical	\$47,643	\$0	\$0	\$47,643
Construction	\$0	\$0	\$0	\$0
Total	\$50,000	\$0	\$4,306	\$54,306

The applicant documented project costs based on LiDAR contractor estimates to survey approximately 7,000 acres, or 11 square miles. The unit cost for the project is approximately \$5,000 per square mile. This relatively high unit cost is, in part, due to the small area identified for mapping. LiDAR flight activities should be coordinated with adjacent counties to lower costs. Missoula County will perform all administrative duties and assume some associated costs. RRGL grant money will be used for

professional and technical costs and remaining administrative costs. Alternative costs would have been \$220,000 to \$550,000 for a ground survey or \$27,500 for aerial photogrammetry at \$27,500.

### Environmental Evaluation

No adverse environmental impacts will result from completion of this project. Use of the data collected in this project will allow Missoula County to (1) identify and protect the most important riparian and environmentally sensitive areas; (2) improve fire fuel hazard mapping to assist in identifying and mitigating wild land fire hazards; (3) improve floodplain hazard mapping to protect floodplains and determine flood risks; (4) improve surface water quality and decrease the negative impacts of stormwater runoff; (5) protect wetlands and designation of riparian buffer zones with updated vegetation mapping to improve and protect aquatic habitat and terrestrial wildlife species; (6) improve water quality in Missoula County through the maintenance of intact floodplains that provide important groundwater filtration and recharge; (7) plan and construct developments and capital improvements in suitable areas with updated topographic data; (8) provide the county with critical data related to planning, ordinance enforcement, subdivision approval, zoning conformance, sanitation permits, and environmental protection; and, (9) provide important information for landowners, developers, contractors, and municipalities in regard to location, design, and construction of on-site wastewater treatment systems and in identifying surface water drainage patterns.

### Funding Recommendation

The DNRC recommends grant funding of \$50,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 66

<b>Applicant Name</b>	Montana Department of Natural Resources and Conservation Water Resources Division State Water Projects Bureau		
<b>Project Name</b>	Martinsdale Supply Canal Headworks Rehabilitation		
<b>Amount Requested</b>	\$	98,688	
<b>Other Funding Sources</b>	\$	23,625	Applicant
	\$	17,729	UMWUA
<b>Total Project Cost</b>	\$	140,042	
<b>Amount Recommended</b>	\$	98,688	

### Project Summary

#### Project History

The Martinsdale Supply Canal diverts water from the South Fork Musselshell River to Martinsdale Reservoir, as part of the Upper Musselshell Water Project. DNRC owns the project; UMWUA operates the project. The headworks to the supply canal are more than 70 years old and are in disrepair. The headworks consist of four slide gates mounted on a buttressed concrete headwall. The upstream trash rack is made of steel railroad rails that originally were spaced about one-foot apart, though several of the rails are damaged and wider openings exist. The rails also support an operator walkway. The headworks slide gates leak when fully closed at a measured rate of approximately 3 to 4 cfs. The leakage results in about 150 acre-feet of lost water during the 75-day irrigation season. This would appear to be a relatively small percentage of the total flow in the South Fork Musselshell River, but it is significant because irrigation demands stress the river during late summer and fall. During the rest of the year, the gates leak about 1,730 acre-feet of water. The leaked water seeps into the canal bottom, does not reach the reservoir, and does not provide a benefit. The damaged trash racks do not prevent large debris from damaging the gates. The damaged headworks platform poses a safety risk to the operator.



The applicant proposes to replace all components of the headworks system, except for the concrete headwall.

#### Technical Approach

The applicant considered no action, temporary repairs, replacing fewer headgates, and locally made headgates. Replacing the headworks components will prevent leakage into the canal and conserve approximately 1,730 acre-feet of water in the South Fork Musselshell River. The repairs will allow water to remain in the river during low flow periods and conserve fish and other riverine species. Conservation of fish and wildlife will also maintain hunting and fishing opportunities in the area and benefit the local economy. The project will remedy a safety concern with the operator platform.

Replacing the trash rack may not solve the problem of damage caused by debris if the same configuration is used with the new trash rack. The applicant should have considered placing the rack at an angle so that debris would glance off it and continue downstream. The applicant should have evaluated replacement of the headwall. Reviewers also noted that the application contained numerous errors including an error in the computation of water loss and inconsistencies in the budget analysis.

Planning, final design, and project coordination are scheduled to begin in fall 2011. Project construction is proposed to begin in October 2012 and end by December 2012. The project schedule appears reasonable.

Specific tasks to be accomplished:

- Develop design plans; apply for environmental permits; and, conduct site survey;
- Complete design contract bid documents and let the bid;
- Demolish the trash rack and operator platform;
- Remove and dispose the existing gates and install new gates;
- Construct new trash rack and operator platform; and
- Remove the cofferdam and replant disturbed sites.

#### **Resource and Citizen Benefits Analysis**

This project addresses issues related to drought by conserving water in the Musselshell River, a river which is frequently dewatered. This project will conserve approximately 1,730 acre-feet of water per year in the South Fork Musselshell River. Improving instream flow will help conserve fish and other aquatic life in the river, especially during low flow months. The project will preserve a state-owned water project and improve management of the water resource. The project enhances public safety by providing a stable platform for the diversion operator.

Public support included 56 letters of support, all copies of the same letter, but each individually signed, UMWUA provided a letter of commitment for the project.

#### **Project Management**

DNRC will administer the project. DNRC engineers will provide technical, environmental, and construction management expertise throughout the project. DNRC proposed a reasonable project management and implementation plan. The project design is conceptual and not yet ready for construction. The project is straightforward and easily implemented during the next two years. No public involvement is necessary for this project. For portions of the project requiring a construction contractor, DNRC will follow a procurement process for advertising and awarding a bid. Reviewers expressed concern that DNRC would be able to manage the project effectively due to budget reductions and other department priorities.



## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$9,882	\$9,882
Professional & Technical	\$0	\$0	\$13,743	\$13,743
Construction	\$ 98,688	\$0	\$17,729	\$116,417
Total	\$ 98,688	\$0	\$41,354	\$ 140,042

The application included an adequate budget for the project. The estimated construction costs were itemized and those costs included a 10% contingency. DNRC will provide \$9,882 in administrative in-kind services and \$13,743 in design and construction oversight services. UMWUA will provide \$17,729 in construction in-kind services. No contingency was provided for any in-kind services. No other funding has been secured. The project serves 46 farms or ranches with a total of 30,558 acres. UMWUA sells 166,174 acre-feet of water per year at a rate of \$6.50 per acre-foot. This project will not affect water rates. No backup plan was presented if RRGL funding is not realized.

## Environmental Evaluation

Except for temporary negative impacts during construction, the project has no adverse environmental impacts. Positive impacts include providing a more stable structure; reducing the potential for preventing soil erosion and damage to farmland that would result from failure of the structure; maintaining irrigation on farm land; conserving fish and wildlife habitat; and, improving public safety by providing a more stable operator platform.

## Funding Recommendation

The DNRC recommends grant funding of \$98,688 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 67

Applicant Name	Ravalli County Environmental Health		
Project Name	Bitterroot Valley Septic Systems Impact Model, Phase 2		
Amount Requested	\$ 73,745		
Other Funding Sources	\$ 17,950	Applicant	
Total Project Cost	\$ 91,695		
Amount Recommended	\$ 73,745		

## Project Summary

### Project History

Groundwater is the sole source of drinking water for 40,000 Ravalli County residents. Over 75% of county residents are serviced by individual, on-site wastewater treatment systems. The Bitterroot TMDL process has identified the main stem of the Bitterroot River and 13 of its tributaries as impaired due to high nutrient loading. The purpose of this project is to protect the Bitterroot Valley drinking water aquifer and the tributaries to the Bitterroot River from nitrate pollution due to septic system discharge. RCEH proposes to assess and model vulnerable areas within the valley and characterize the quality of the groundwater source. The county will then use the information to implement pollution management practices and reduce nitrate contribution to surface and groundwater, while allowing growth and development. The project will build on previous and on-going studies to provide additional data and groundwater modeling to fill in existing data gaps. Management and preservation of surface and groundwater resources will be the primary benefits of the project.

## Technical Approach

The applicant considered continuing to use the Bauman and Schaffer model to evaluate subdivision and septic system requests, establishing septic system moratoriums in areas of significant water quality degradation, and no-action. None of these options would provide the county with a comprehensive, calibrated numerical model on which to base planning decisions. The results of this project will be used in conjunction with the phase 1 and other similar studies to provide a defensible tool for the county to use in the preservation and management of ground and surface water in the Bitterroot Valley.

The applicant submitted sufficient data to justify the need for this study. The data also provides adequate hydrology, soils, and vegetation information upon which to begin groundwater modeling. The application did not explain why the existing data and current groundwater monitoring projects are inadequate to accomplish the project objectives nor did it explain how the phase 1 data and the lessons learned from that project will guide the phase 3 study. The project is scheduled to begin with consultant selection in August 2011 and is scheduled for completion in December 2012.

Specific tasks to be accomplished:

- Contract with a consulting firm to complete groundwater modeling;
- Identify areas to develop a groundwater model;
- Solicit volunteer homeowners for additional well testing and water-level measurements;
- Install water level instruments in county-owned monitoring wells;
- Collect water quality samples, water-level measurements, and data from county wells;
- Develop a draft vadose zone and numerical groundwater model for comment;
- Prepare the final model, map, and tool for long-term groundwater monitoring and provide RCEH staff with training on its use;
- Upload and manage all data in a database; and
- Disseminate information to the public.

## **Resource and Citizen Benefits Analysis**

The project will enable Ravalli County to monitor nitrate loading to groundwater and surface water and manage the resource to protect it from further contamination due to development. This action will preserve the Bitterroot River and its tributaries, protect recreational opportunities, promote the valley as an enticing place to live, and facilitate sustainable growth.

The applicant proposes to build upon the Groundwater Vulnerability Mapping Project, the Bitterroot Valley Septic System Impact Tool that was developed during phase 1, the Groundwater Investigation Program with MBMG, the Bitterroot TMDL process, the Montana Nonpoint Source Management Plan (2007) and Ravalli County Subdivision Regulations. The project will coordinate and integrate data from the phase 1 and phase 2 studies with these other studies to avoid duplication and ensure complimentary data sharing.

The study can generate a tool to use for evaluating and planning for the increase in septic systems associated with new development and provide guidance to mitigate potential impacts from septic systems. This will help preserve the resources that Montanans enjoy. Local and state agencies and private individuals submitted letters of support for this project.

## **Project Management**

The proposed staffing and coordination for this project is adequate in size and experience to manage the project and the contract. The application included public involvement through meetings to explain the project and solicit 45 homeowners to volunteer for well testing. The application included a detailed timeline.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$3,450	\$3,450
Professional & Technical	\$73,745	\$0	\$14,500	\$88,245
Construction	\$0	\$0	\$0	\$0
Total	\$73,745	\$0	\$17,950	\$91,695

The proposed budget is feasible even though the application did not specify the modeling approach. Consultant estimates are based on estimates provided during phase 1. The actual cost of modeling each area will be identified during the RFP process. Ravalli County has committed \$17,950 of in-kind services to support the project. This will include staff time to administer the grant, solicit homeowner participation, collect water samples, hold public meetings, and training to use the groundwater modeling tool. There is no backup plan for funding if the RRGL grant is not awarded.

## Environmental Evaluation

The applicant has adequately investigated the potential environmental impacts of completing this study. The environmental checklist is complete and justified. The project will have numerous positive environmental impacts because it is designed to protect the pristine nature of the groundwater aquifer and preserve the surface water resource. No negative environmental impacts are expected to occur as a result of this study.

## Funding Recommendation

The DNRC recommends grant funding of \$73,745 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 68

<b>Applicant Name</b>	Foy's Lakeside County Water and Sewer District		
<b>Project Name</b>	Water System Improvements		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$	24,500	Applicant
	\$	90,404	Bank Loan
<b>Total Project Cost</b>	\$	214,904	
<b>Amount Recommended</b>	\$	100,000	

## Project Summary

### Project History

The Foy's Lakeside WSD, Flathead County, serves 14 residential homes and two lots that are yet undeveloped. The water mains leak and the system is not metered. The district has completed a PER that identified an estimated \$406,842 in water system improvements. This amount is not financially feasible, given the limited number of users. Therefore, the system improvements were segmented and prioritized into three phases. This project would implement the phase 1 improvements and would address the most critical system needs.

### Technical Approach

The applicant proposes to replace leaking mains, install meters for the water supply and all services, and perform minor re-piping that would allow supply metering and future chemical treatment. The proposed



technical approach is sound and feasible. The applicant analyzed alternatives to the proposed action and selected the proposed action based on sound engineering principals and professional judgment.

There is little doubt the mains are leaking. But, that conclusion was based on increased energy use for pumping. Whether increased energy use is due to leakage or due to increase water use is not certain. The proposed schedule may be aggressive because it identified several tasks for completion prior to April 2011. The project is neither large nor technically difficult, so completing the project in 2011 is realistic.

Specific tasks to be accomplished:

- Replace 1,730 lineal feet of three-inch PVC water main;
- Install a new air release valve and manhole;
- Replace 355 lineal feet of ¾-inch polyethylene service line; and
- Install water service meters and meter pits.

## Resource and Citizen Benefits Analysis

This project is identified as the first phase of improvements identified in the PER. The existing water main leaks excessively. The application estimated that replacing the water mains will save at least 1.25 million gallons of water, annually. Therefore, the project will conserve the groundwater resource. Metering each individual service and setting up a fee schedule based on actual usage will also result in reduced water use. The district has not yet established the fee structure. Whether metering achieves the projected conservation benefit will depend on a fee structure that discourages excessive use.

The project also allows for better management and control over the entire system. The project includes piping modifications that will facilitate accurate metering of the water being drawn from the wells before entering the distribution system. These modifications will help identify other significant leaks. This piping modification will also facilitate future chemical treatment, which may soon be required by regulatory agencies.

Initially, the homeowners were resistant to usage-based fee structure, something water service meters would facilitate. Ultimately, they realized it was necessary to resolve system capacity issues and water conservation.

## Project Management

This will be the first Renewable Resources Grant and Loan Program (RRGL) project managed by the district. Thus, district staff lacks relevant management experience. The district will contract with a consultant, not yet selected, to administer the funding administration and with an engineer. The project schedule may be somewhat too aggressive for construction during 2011, but the project can be completed within the next two years.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$2,602	\$0	\$4,450	\$7,052
Professional & Technical	\$0	\$0	\$24,500	\$24,500
Construction	\$97,398	\$0	\$85,954	\$183,352
Total	\$100,000	\$0	\$114,904	\$214,904

The funding strategy includes an RRGL grant, a bank loan of \$90,404, and district reserves of \$24,500. The project is financially feasible, assuming that cost estimates are realistic and that the district has the ability to assess fees accordingly. Monthly water rates are \$41 per month and would increase to \$82.63 per month as a result of this project.



## Environmental Evaluation

There will be minor, short term impacts to air quality. A stormwater pollution prevention permit and the use of best management practices will mitigate erosion and sediment transport.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 69

<b>Applicant Name</b>	Pablo/Lake County Water and Sewer District
<b>Project Name</b>	Water System Improvements
<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 500,000 TSEP
	\$ 450,000 CDBG
	\$ 315,385 RD Grant
	\$ 384,615 RD Loan
	<u>\$ 200,000</u> WRDA
<b>Total Project Cost</b>	\$1,950,000
<b>Amount Recommended</b>	\$ 100,000

## Project Summary

### Project History

The Pablo/Lake County WSD water system was initially constructed in 1972. It presently consists of four wells with a total pumping capacity of 625 gpm. Current peak day demands are estimated at 832 gpm, suggesting the existing system cannot meet water demands with all wells in operation. Moreover, the largest well will be taken out of service, as required by the DEQ Circular-1. The utility also has an elevated steel water storage tank that provides approximately 186,000 gallons of storage. With average monthly water demands ranging from just over 100,000 gpd to nearly 300,000 gpd, the storage is seriously undersized and this assessment does not account for fire flows. The Flathead Indian Reservation operates a tribal college that is served by the utility. As a result, fire flows of at least 3,000 gpm for three hours are necessary. The estimated storage deficiency for the current system is over 650,000 gallons. Finally, the distribution system was originally constructed with a very thin walled PVC pipe and with poor construction practices. Several serious distribution system failures have occurred in recent years. An extensive project is underway to replace much of the existing distribution system, but some areas are still in need of repair.

### Technical Approach

The preferred alternative involves construction of a new well, construction of a new storage tank, and the completion of pipeline replacement in areas where distribution system failures are still occurring. The analysis of alternatives was inadequate. The proposal lacked supporting information and preliminary design information pertinent to the project approach. Inappropriate methodologies were used for the present worth analyses. Alternatives that were considered only included the potential for increasing the sizes of proposed infrastructure. The proposal did not consider alternative siting information, storage tank materials, or system configuration. The preferred alternative, while feasible, does not fully address improvements necessary to provide a system meeting design standards for the current service area. Additional improvements would be necessary and a plan for how those projects would be completed was not provided.

Specific tasks to be accomplished:

- Construct a 450,000-gallon ground storage tank and booster station;
- Install one, new 210 gpm supply well;
- Construct 1,310 linear feet of 10-inch distribution main; and
- Replacement of distribution main that is failing.

### Resource and Citizen Benefits Analysis

The proposed project has considerable resource benefits associated with management, development, and conservation of groundwater supplies. Metering devices will be installed with the project, a new groundwater well will be constructed, and by correcting failing pipeline infrastructure, conservation is possible. The PER did not quantify any of the benefits except to select a size for the proposed well. Although the PER did not identify the potential for energy savings, replacement of the leaking distribution system piping will result in reduced pumping requirements. According to DEQ staff, the area has been stifled in terms of development due to serious water system capacity issues. DEQ has denied development plans and specifications in the area due to the lack of a sufficient water supply. Completing this project would be a significant step forward in addressing these challenges. Finally, there are significant public health and safety benefits associated with this project, making it an important improvement for the community.

### Project Management

The PER did not adequately address the potential need for a water right due to the installation of a new well. This could pose construction timeline challenges and a thorough discussion of status was not provided. In general, the proposed project implementation plan seems reasonable for the project selected. The application did not address important details that could significantly impact implementation.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$87,500	\$87,500
Professional & Technical	\$0	\$0	\$215,000	\$215,000
Construction	\$100,000	\$0	\$1,547,500	\$1,647,500
Total	\$100,000	\$0	\$1,850,000	\$1,950,000

Financially, the proposed budget likely is insufficient to adequately fund administrative and professional/technical services. This project depends on several funding programs. Administrative services necessary to meeting all the various program requirements are very limited. Likewise, professional/technical services are only about 10% of the entire project. Additional professional/technical services may be required to develop information for final design, to support the full time construction phases, and to assist with several different project components (a well, booster station, storage tank, and various piping improvements). There also are some issues reconciling existing rate revenues (which appear sufficient to cover the proposed debt service for the project already) with proposed rate increases. The PER stated that the applicant is challenged in funding a project that could meet current design standards and is, therefore, phasing the improvements. Information presented in the PER suggests that there may be ways to remedy this concern.

## Environmental Evaluation

A review of environmental comments received suggested that the proposed storage tank site should be evaluated more thoroughly for cultural resources and wetlands. It does not appear that steps were taken to address these concerns. As a result, it is difficult to ascertain whether the project could have significant long-term negative impacts on the environment.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 70

<b>Applicant Name</b>	Cut Bank, City of
<b>Project Name</b>	Water System Improvements, Phase 4
<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 500,000 TSEP Grant
	\$ 564,000 SRF Loan
	\$ 200,000 SRF Forgiveness
	<u>\$ 250,000</u> STAG WRDA
<b>Total Project Cost</b>	\$1,614,000
<b>Amount Recommended</b>	\$ 100,000

## Project Summary

### Project History

The City of Cut Bank water system was originally constructed in 1914. In 1998, a water system needs analysis was prepared that identified several improvements the city has been working on in recent years. The 2008 PER recommended replacement of 19,100 linear feet of pipe in four phases. The current project, Schedule 3, will replace leaking and undersized water mains.

### Technical Approach

This proposed project is the final phase of water main replacement, as recommended in the 2008 PER. Hydraulic modeling of the water distribution system, as documented in the PER, adequately identified the undersized mains for replacement. The main purpose of the project, however, is to replace very old mains that are at the end of their useful life, are leaking, and require extensive and on-going maintenance and repairs.

The PER did not evaluate alternative pipe materials, nor did it evaluate alternatives to standard replacement methods, although the proposed materials and methods are technically sound. The schedule identified approval of all funding sources in April 2011, project design and approval from July 2011 through January 2012, and construction from May 2012 through October 2012. This schedule is feasible.

Specific tasks to be accomplished:

- Replace 6,200 lineal feet of water main with eight-inch and six-inch PVC water main;
- Replace and add six new fire hydrant assemblies;
- Replace 91 water service connections; and
- Repair and replace the streets and sidewalks impacted by the project.



## Resource and Citizen Benefits Analysis

This project is the final phase of extensive replacement of the Cut Bank water distribution piping. The system is very old and undersized in some areas and needs replacement. Repairing the water mains will eliminate the leakage and, thereby, conserve water in Cut Bank Creek, the supply source. The PER identified extensive leakage system wide, but did not quantify the amount of leakage from the pipes that will be replaced. The existing mains, four-inch pipes that restrict fire flows, will be replaced with adequately sized water mains that will improve fire flows. Replacement of the mains will improve efficiency of the system pumps and water treatment processes and, thereby, reduce energy costs.

The city held multiple public meetings and involved the public throughout the planning process. The project will be used by the public, has co-funding from non-state funds in an amount greater than the grant request, and has for public health and safety benefits.

### Project Management

The proposed project management plan is adequate and Cut Bank has the experience and expertise in place to manage the project. The project can be implemented within the next two years without difficulty. The project will follow standard procurement processes.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$55,100	\$55,100
Professional & Technical	\$0	\$0	\$120,000	\$120,000
Construction	\$100,000	\$0	\$1,338,900	\$1,438,900
Total	\$100,000	\$0	\$1,514,000	\$1,614,000

The city proposes a funding strategy that involves several sources, as identified above. The matching funds will be secured through an SRF loan. The proposed SRF forgiveness might not be realistic because there are no remaining ARRA funds and forgiveness would depend on the conditions of future federal grants to the SRF program. If SRF forgiveness is not possible, the city might include the \$200,000 in the SRF loan. The Cut Bank water system serves 1,722 EDU users. Monthly water rates are \$44.16 and would increase to \$47.13 as a result of this project.

### Environmental Evaluation

There will be minor, short-term environmental impacts during construction. The city will follow best management practices to minimize impacts to air quality and reduce sediment transport.

### Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## Project No. 71

**Applicant Name** University of Montana Natural Heritage Program  
**Project Name** Wetland and Riparian Mapping for the Lower and Middle Musselshell Watersheds

**Amount Requested** \$ 99,934  
**Total Project Cost** \$ 99,934

**Amount Recommended** \$ 99,934

### **Project Summary**

#### Project History

Wetland maps are a critical data source for resource management. The Montana Natural Heritage Program has been utilizing 1-meter resolution aerial photo-interpretation to map Montana's wetlands and riparian areas since 2006. Exact locations of wetlands are necessary to effectively plan development projects. Wetlands and riparian areas perform critical nonpoint source abatement functions, such as filtration of pollutants from surface runoff and storm and flood water storage. Wetlands and riparian mapping is essential for over 100 different uses including floodplain planning, drinking water supply development, utility siting, and transportation corridors.

#### Technical Approach

The wetlands and riparian areas of the Lower and Middle Musselshell watersheds have not been mapped at a scale that is useful for future development planning. As the mapping is completed, the information is added to the NRIS data base, the source for digital geographic data in Montana.

The Musselshell River has been declared a chronically dewatered stream under the Montana Water Measurement Program Act of 1991. Although the Musselshell Watershed Coalition has accomplished some goals towards improving the water quality and quantity, additional work remains. One task is the completion of the mapping of the riparian and wetlands in the watershed.

Two methods were assessed for this mapping project, aerial photointerpretation and actual on-site evaluations with global positioning system (GPS) mapping. The on-site evaluation option was discounted based on cost of the GPS units that would be required by a field staff of between 5 and 10 experienced wetland ecologists. The preferred alternative schedule is estimated at 18 months, beginning July 2011.

Specific tasks to be accomplished:

- Procure high resolution aerial imagery;
- Digitize and characterize wetlands and riparian areas;
- Conduct field verification surveys;
- Complete internal QA/QC of wetlands and riparian mapping; and
- Send wetland mapping to NWI regional coordinator for approval.

### **Resource and Citizen Benefits Analysis**

Wetlands mapping, under NWI, is a federal mandate dating from the 1970s. NWI is an unfunded mandate and the wetlands of Montana have never been completely mapped. Due to lack of funding, Montana is one of the two least mapped states in the nation. Coverage is fragmented and this presents problems when local governments attempt to make land use decisions.

The Musselshell Watershed Coalition will benefit from this mapping project with data on location, type, acreage, and potential function of the riparian and wetlands within the area. The information will be used for conservation, development, or restoration.

## Project Management

This project will require wetland photointerpreters to digitize and classify wetlands and riparian areas using one-meter resolution true-color and color-infrared aerial imagery. The areas will be classified according to standards set forth by the NWI. Most of the work will be performed on computers, while field surveys are planned to verify the mapping. The project will require a wetland ecologist/project manager, a landscape ecologist, and two or more wetland photointerpreters.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$32,172	\$0	\$0	\$32,172
Professional & Technical	\$67,762	\$0	\$0	\$67,762
Construction	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$99,934</b>	<b>\$0</b>	<b>\$0</b>	<b>\$99,934</b>

The total funding for this project is anticipated to come from the RRGL Grant. This will pay the salaries and salary overhead for three appointed employees, management costs, travel expenses, and supplies. The high resolution aerial imagery needed to complete the mapping to federal data standards is freely available from NRIS.

## Environmental Evaluation

There will be no environmental impacts directly associated with this project. The finished product will be useful to minimize environmental impacts resulting from future development that might affect riparian or wetlands areas of the Lower and Middle Musselshell watersheds.

## Funding Recommendation

The DNRC recommends grant funding of \$99,934 upon development and approval of the final scope of work, administration, budget, and funding package.

## Project No. 72

**Applicant Name** Bozeman High School, Montana School District No. 7  
**Project Name** Mandeville Creek Restoration and Community Education

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 25,000 FWP  
\$ 25,000 National Fish and Wildlife Foundation  
\$ 10,000 Bozeman High School's Volunteers  
\$ 3,300 Montana Trout Foundation  
\$ 63,300 Applicant  
**Total Project Cost** \$ 163,300

**Amount Recommended** \$ 100,000

## Project Summary

### Project History

Mandeville Creek traditionally provided high water quality and fisheries habitat, with a benefit to the East Gallatin River. But, as a consequence of urbanization, the creek now is channelized. As recently as 50 years ago, Mandeville Creek provided habitat for westslope cutthroat trout, a state listed species of concern. No coldwater fish species have been documented in the waterway in recent surveys. The Mandeville Creek restoration work group, convened in 2006, is a coalition of water resource agencies,



educators, stakeholders, landowners, and the public. In addition to the requested funds, matching funds were obtained from the FWP, the National Fish and Wildlife Foundation 5 Star Restoration Program, and the Montana Trout Foundation.

### Technical Approach

The applicant proposes to restore a 2,000-foot length of Mandeville Creek. The project will restore ecological function, demonstrate the impact of urbanization, and demonstrate the benefits of restoration. The project also will restore natural riparian habitat, return stream flow to natural patterns, remove a culvert, restore fish habitat, and improve water quality in the East Gallatin River. The application was developed by science faculty in the Bozeman School system, in partnership with Montana State University faculty. The restored creek will be a living classroom and used for educational purposes.

The application includes a comprehensive work plan for project development that catalogues current creek conditions and documents the current status of the aquatic invertebrate population in Mandeville Creek. The application also identifies the need to collect additional physical, chemical, and biological data necessary to monitor and evaluate water quality restoration.

Alternatives included no action, as well as restoring 800 feet of the channel rather than the 2,000 foot restoration, the proposal's preferred alternative. The educational component would be satisfied at either targeted restoration level. In addition, the applicant did not consider relocating the project further downstream to potentially increase the ecological benefits that would result from the project. A downstream location would be further from school facilities, and thus would have less educational value given transportation logistics versus the preferred alternative of a living classroom incorporated within the campus grounds.

Specific tasks to be accomplished:

- Convert a straight channelized stream to a meandering *planform* with lower banks that form an inset floodplain to support riparian vegetation, involving excavation, coir layers, installation of plant material, and relocation of urban features.

### **Resource and Citizen Benefits Analysis**

The project will restore surface water, fisheries, riparian habitat and recreation associated with Mandeville Creek. Resource and citizen benefits include the preservation of surface water, preservation of fisheries and recreational opportunities, and restoration of natural and historic creek flow. In addition to preservation of surface water, a public benefit will be improved water quality, including runoff into the East Gallatin River. The project will promote education and research. Public support included local landowners and stakeholders, fisheries and conservation groups, and the FWP.

### **Project Management**

Science faculty in the Bozeman School District will oversee this project and incorporate the project into curriculum for current and future years.

### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$0	\$0
Professional & Technical	\$0	\$0	\$25,000	\$25,000
Construction	\$100,000	\$0	\$38,300	\$138,300
Total	\$100,000	\$0	\$63,300	\$163,300

In addition to funding from the Bozeman School District in the form of volunteer professional time from faculty in the school district and University System (valued at \$10,000), the FWP is contributing \$25,000, the National Fish and Wildlife Foundation 5 Star Restoration Program is contributing \$25,000, and the

Montana Trout Foundation is contributing \$3,300. These funds are being used for professional/technical services and construction costs.

**Environmental Evaluation**

There are no identified negative environmental impacts associated with this project.

**Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

**Project No. 73**

<b>Applicant Name</b>	White Sulphur Springs, City of		
<b>Project Name</b>	Water System Improvements		
<b>Amount Requested</b>	\$ 100,000		
<b>Other Funding Sources</b>	\$ 100,000	WRDA	
	<u>\$2,356,217</u>	SRF	
<b>Total Project Cost</b>	\$2,556,217		
<b>Amount Recommended</b>	\$ 100,000		

**Project Summary**

**Project History**

The City of White Sulphur Springs serves a population of just under 1,000 people. The city water system consists of a filtered surface water source, two wells, a 450,000-gallon storage tank, and a distribution system. The storage tank was constructed in 1946 and is in serious need of replacement. An underwater inspection was completed in 2008. The tank is failing structurally and there is exposed rebar in both floors and walls. The roof is in danger of collapsing and is no longer a safe place for maintenance personnel to perform their duties. The disinfection system also is in poor working condition. The distribution system faces several challenges. A section of main has broken several times and should be replaced. Several dead end and undersized water mains should be upgraded to improve circulation and fire flows. Finally, although the city has both a surface water and groundwater supply, its two wells presently cannot operate simultaneously. As a result, the city cannot rely solely on the groundwater supply to serve the community. Having this operational flexibility would provide a more reliable water supply in the event of failures. More control on blending and selection of the most seasonally appropriate water supply would allow for optimizing operations at the surface water filtration plant.

**Technical Approach**

The preferred alternative involves replacement of the water storage reservoir and disinfection system, completion of distribution system improvements in the downtown area, and completion of some piping improvements between the two wells to expand the system. The technical approach is feasible, however, the screening phase should have considered demands for increased capacity and the need for an oversized storage tank and internal baffling to improve operational flexibility related to disinfection/disinfection by-product formation. Despite these issues, it is likely the most appropriate alternative was selected and additional technical concerns can be addressed more thoroughly with limited impacts to the proposed improvement.

Specific tasks to be accomplished:

- Construct a 543,000-gallon new concrete storage tank 1,400 feet west of the existing tank, along the route of the existing transmission pipeline;
- Minor improvements at the existing wells, including will involve replacing the disinfection system, modifying well house plumbing, and updating controls to allow proper disinfection and the ability to operate both wells at one time;
- Modification to the existing water right; and,
- Replacement of 800 feet of 60+ year old ten-inch steel water line on Main Street.

### Resource and Citizen Benefits Analysis

This project will conserve groundwater and surface water and will conserve energy. The utility is presently reporting an average per capita water use of almost 300 gallons per capita per day. This is an extremely high water demand and, due to the condition of the system, likely is associated with loss of water in both the storage tank and the distribution system. Although the utility has indicated it uses a billing software program, an effort to measure unbilled water across the system and estimate the impacts of the improvements was not completed. The utility does utilize a surface water supply as well, but has indicated it has a desire to rely much less on this supply. As a result, the project will have a limited surface water conservation benefit. The project will result in energy conservation due to reduced pumping.

### Project Management

In general, the project management proposed for implementing this project is acceptable. Although public meetings were held routinely to discuss the utilities, the proposal did not indicate whether proof provided that the public was specifically informed of the project prior to the meetings. Two letters were provided in support of fixing the failing distribution system pipeline.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$3,140	\$0	\$233,577	\$233,577
Professional & Technical	\$15,120	\$0	\$362,880	\$378,000
Construction	\$81,740	\$0	\$1,858,760	\$1,940,500
Total	\$100,000	\$0	\$2,455,217	\$2,555,217

Although this project is significant in terms of cost for a small community, White Sulphur Springs does not have rates that are higher than its target rate and does not plan to raise them, even with the bulk of financing coming from a loan, to meet that threshold. At the present time, White Sulphur Springs charges \$18.01 per user for water. The debt associated with this project, will nearly double the water rate, at an estimated rate of \$36.24 per customer. Sewer rates are presently \$7.00 per month, for a combined utility rate of \$43.25. With a combined Target Rate of \$54.11, financing this entire project through rates will still only result in a combined rate that is 80% of the combined target rate.

### Environmental Evaluation

The environmental evaluation was thorough, complete, and involved coordination with various environmental agencies with oversight in the area. The project is not anticipated to have significant long-term negative impacts on the environment.

### Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.



## Project No. 74

<b>Applicant Name</b>	Montana Department of Natural Resources and Conservation Water Resources Division State Water Projects Bureau
<b>Project Name</b>	Cooney and Deadman's Basin Automated Instrumentation
<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 19,137 Applicant
<b>Total Project Cost</b>	\$ 119,137
<b>Amount Recommended</b>	\$ 100,000

### **Project Summary**

#### Project History

Cooney Reservoir, located near Roberts, and Deadman's Basin Reservoir, located near Ryegate, are both high-hazard earthen dams owned and operated by the State of Montana. The reservoirs were constructed in the 1930s. Combined, the reservoirs serve 572 farms and ranches in their respective watersheds. Drought has severely affected both watersheds during the past ten years, leading to water shortages and water rationing. In an effort to improve water management in both watersheds, the SWPB proposes to install measurement and automation equipment at each dam. The automation equipment would allow for near real-time monitoring of the respective discharges to each irrigation canal from the Helena office and, thereby, improve management of the water resources in each area. The project also will promote more efficient and effective use of water in watersheds historically affected by drought.

#### Technical Approach

The applicant proposes to install vertical wells with vibrating wire transducers within both Cooney and Deadman's Basin Reservoirs. The applicant also proposes to install a pressure transducer on a weir downstream from Cooney Reservoir and a Doppler velocity meter on the concrete outlet structure of Deadman's Basin Reservoir to measure flows discharged from each reservoir. The automation equipment will improve both water management and conservation, while helping dam operators maintain the delicate balance between recreation and agricultural production in both watersheds.

The application presented a number of different alternatives to improve management of each reservoir. These alternatives included multiple configurations of different automation equipment. The other alternatives were eliminated because of concerns for increased manual labor, accuracy, and compatibility with existing equipment. The application did not provide detailed cost data for the alternatives analyzed nor did it provide a cost benefit analysis. The information provided did not conclusively show that the proposed alternative was the most economical or cost effective over the life of the project. The preferred alternative appears to be the approach that best fits the existing operational protocol and equipment. The cost estimate provided for the preferred alternative included a 10% contingency to protect against price increases and appeared to be reasonable for the work proposed.

Specific tasks to be accomplished:

- Administer grant administration and set-up project;
- Final design and development of construction plans;
- Measurement equipment installation at Cooney Reservoir;
- Measurement equipment installation at Deadman's Basin Reservoir; and
- Project close out.

## Resource and Citizen Benefits Analysis

The project will provide multiple benefits by improving management of both reservoirs. Automation measures will promote water conservation. Dam operators will use the stage gauges to better manage inflows and outflows to maintain sufficient water levels to support local fisheries and recreation. Monitoring of flows into the downstream canals will promote the efficient and beneficial use of water resources. The conservation of water will improve local fisheries and recreation, while also providing benefits to local irrigators. The project will serve 572 farmers and ranchers and an unknown number of recreationists.

The proposed improvements are another step in a long range water storage plan developed by the SWPB. The local community, businesses, CD's, and irrigators all expressed strong support for this project.

## Project Management

The DNRC SWPB will provide a project manager, provide the final design and construction documents, and will oversee construction. DNRC will hire a licensed contractor for construction and installation of the automation equipment. Design and development of bid documents will occur upon the award of the grant. Following contracting the project will be ready to proceed, with completion projected by fall 2012.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$4,200	\$4,200
Professional & Technical	\$52,801	\$0	\$5,250	\$58,051
Construction	\$47,199	\$0	\$9,687	\$56,886
Total	\$100,000	\$0	\$19,137	\$119,137

The application requested \$100,000 in grant funding and has committed \$19,137 in matching funds for completion of the project. The DNRC will provide engineering and construction oversight for the project as in-kind services. DNRC has used a similar approach to fund previous successful projects and the approach is feasible. The proposed project is not projected to increase the annual assessment per acre.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term environmental concerns associated with construction will include noise, dust, and vegetative disturbance, can be mitigated by using best management practices.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## **Project No. 75**

<b>Applicant Name</b>	Park Conservation District		
<b>Project Name</b>	Livingston Ditch Water Efficiency and Infrastructure Protection		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$	20,000	Livingston Ditch WUA
	\$	28,100	City of Livingston
	\$	20,000	Park County
<b>Total Project Cost</b>	\$	168,100	
<b>Amount Recommended</b>	\$	100,000	

## **Project Summary**

### **Project History**

The Livingston Ditch WUA has been providing water to irrigators since 1880. The project delivers water through about 11 miles of canals to about 100 farms and ranches on approximately 3,000 acres of irrigated land in Park County. This project is part of a continuing effort by Livingston and Park County to enclose the ditch where it passes through Livingston.

### **Technical Approach**

Park CD proposes to place 600 feet of the canal into a 60-inch diameter CMP. The applicant considered seven alternatives to the proposal, including no action, two different types of liner, and four pipe options. The ditch in this area is an open concrete canal that is severely deteriorating. A partial wooden cover over the canal is also deteriorating. The open ditch is a safety hazard to people living near the canal. This portion of the canal is estimated to seep about five to six cfs. Alternatives were eliminated based on either cost or an insufficient project life span. Prior to construction, the applicant should more thoroughly analyze pipe materials and sizes. There might be better options than the pipe that is proposed.

An engineering consultant will be hired to complete final design, help advertise for bids and provide construction inspection. The proposed start date is July 2011, with construction completed by May 2012. This schedule appears to be reasonable.

Specific tasks to be accomplished:

- Hire an engineer;
- Final design;
- Construction contractor selection;
- Remove existing concrete liner;
- Prepare pipe bedding;
- Install pipe;
- Backfill pipe;
- Site cleanup; and
- Contract closeout.

## **Resource and Citizen Benefits Analysis**

This project is part of the city and county plan to enclose the Livingston Ditch where it passes through Livingston. The project will eliminate about five to six cfs of seepage from a section of the canal. Seepage is causing significant water loss and property damage adjacent to this portion of the canal. The pipe will help to provide the full amount of irrigation water to the land further down the canal. More efficient delivery of the irrigation water will result in less water diverted from the Yellowstone River. The



conserved water will be available to maintain instream flow in Fleshman Creek. FWP would like to enhance the fishery in this creek. The applicant intends to install two measuring devices on this canal.

The Livingston Ditch WUA, City of Livingston, Park County Commissioners, Park CD, FWP, a state representative, Montana TU, and the Shields Valley Watershed Group have all expressed support for this project.

### **Project Management**

The project management plan seems to be adequate. All the participants in this project have previously completed projects similar in scale to this project. The construction will be completed by a contractor. The schedule is adequate to complete the project within the next two years.

### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$2,400	<b>\$2,400</b>
Professional & Technical	\$20,000	\$0	\$4,500	<b>\$24,500</b>
Construction	\$80,000	\$0	\$61,200	<b>\$106,700</b>
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$68,100</b>	<b>\$168,100</b>

The Livingston Ditch WUA and the City of Livingston have each committed \$20,000 to this project. Park County intends to commit \$20,000 to the project. The applicant also proposes to match the RRGL grant with a grant from either the USBR or the NRCS. The match grant has not yet been secured. If actual costs exceed the projected costs, the project may need to be scaled back.

### **Environmental Evaluation**

Construction activity will create dust and noise in the immediate construction site area, but steps will be taken to minimize these impacts. The area around the construction area will be reclaimed upon completion of construction.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### **Project No. 76**

<b>Applicant Name</b>	Carbon County Conservation District
<b>Project Name</b>	Whitehorse Canal Company – River Bank Stabilization
<b>Amount Requested</b>	\$ 82,950
<b>Other Funding Sources</b>	\$ 5,000 Whitehorse Canal Company
	<u>\$ 2,850</u> Applicant
<b>Total Project Cost</b>	\$ 100,800
<b>Amount Recommended</b>	\$ 82,950

### **Project Summary**

#### **Project History**

The Whitehorse Canal Company was organized in 1907. The company consists of a canal intake located on the Clarks Fork of the Yellowstone River and approximately 15.5 miles of main and lateral canals. The canals provide water to approximately seven farms and ranches on 1,000 acres. The river bank at the

headgate has been eroding and the company has been making temporary repairs to the intake for years. This project will permanently protect the river bank from erosion and protect the headgate structure, thus ensuring a dependable supply of irrigation water.

#### Technical Approach

Carbon County CD proposes to re-grade the river shore line, place riprap on the regraded river bank and place willows within the riprap. The applicant considered five alternatives to the proposal, including no action, riprap alone, gabions, riprap with willows, and riprap toe with brush mattresses. Several alternatives were rejected because of cost, extra maintenance, or were not an effective solution to the problem. The preferred alternative is not the least costly alternative, but it will provide for a more stable riprap bed and also provide wildlife habitat.

The project would begin in June 2011, with final engineering design and construction completion in November-December 2011. This schedule appears to be reasonable.

Specific tasks to be accomplished:

- Select an engineer;
- Complete final design;
- Advertise for bids and award a construction contract;
- Dewater the construction site;
- Regrade the stream bank;
- Place bedding and geotextile;
- Place riprap;
- Plant willows; and
- Contract closeout.

#### **Resource and Citizen Benefits Analysis**

This project will eliminate the need to repair the inlet structure almost annually and eliminate the sediment that the structure currently contributes to the Clarks Fork River. The project will help to ensure that a reliable supply of irrigation water is available to the White Horse Canal Company. The water is the life blood for the seven farms and ranches served by the company. The fishery will also benefit from the project because less sediment will enter the river. The planting of willows above the riprap will provide cover and habitat for wildlife.

The Carbon County Commissioners, the Carbon County CD, and the White Horse Canal Company have expressed support for this project.

#### **Project Management**

The project management plan seems to be adequate. The PER has been completed. The final details will be completed together with the preparation of construction bid documents. The schedule is adequate to complete the project by December 2011.

#### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$2,850	\$0	\$2,850	\$5,700
Professional & Technical	\$2,100	\$0	\$15,000	\$17,100
Construction	\$78,000	\$0	\$0	\$78,000
Total	\$82,950	\$0	\$17,850	\$100,800

The Carbon County CD will provide \$2,850 in matching for grant administration. The White Horse Canal Company has committed \$15,000 to help fund this project.

## Environmental Evaluation

Construction activity will create dust and noise in the immediate construction site area, but steps will be taken to minimize these impacts. The completed project will provide a stable stream bank and eliminate soil erosion into the river. The willows will provide cover and enhanced habitat for wildlife.

## Funding Recommendation

The DNRC recommends grant funding of \$82,950 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 77

<b>Applicant Name</b>	Ronan, City of
<b>Project Name</b>	Stormwater System Improvements
<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 500,000 TSEP \$ 500,000 SRF
<b>Total Project Cost</b>	\$1,100,000
<b>Amount Recommended</b>	\$ 100,000

## Project Summary

### Project History

The stormwater system in Ronan consists of storm drain pipe ranging in diameter from 6 inches to 18 inches, catch basins, open channel ditches, an oil/water separator, a drainage pond built as part of the new hospital project, and multiple outfalls into Spring Creek. The first drainage canal probably was dug by the Civilian Conservation Corps in the late 1930s and early 1940s to alleviate flooding in portions of town. Most of the remaining system was constructed in the late 1970s and early 1980s. It consists primarily of CMP culvert and PVC pipe.

There is a lack of conveyance and no treatment for stormwater. Some areas of town are prone to flooding due to lack of an adequate stormwater system. A majority of the stormwater discharges directly or indirectly to Spring Creek. Spring Creek is a Class B1 water body and is maintained for drinking, culinary uses, swimming, and recreation. Sampling results collected from stormwater document elevated levels of *E. coli* and other contaminants in the creek. Spring Creek meanders through Ronan City Park and children swim and play in the water. A public splash pad is located in the park and uses water from the creek. Young children are exposed to *E. coli* via stormwater discharge into the creek.

### Technical Approach

The application is in general compliance with the PER outline which was included with the application. Reasonable alternatives were considered although the design criteria used to evaluate options were somewhat vague. The basis for selection of preferred options was not clear. Adequate supporting data was provided. The project schedule indicated design would initiate in the 3<sup>rd</sup> quarter 2011 and the work completed in 3<sup>rd</sup> quarter 2012. This schedule is feasible. Construction might continue into the 4<sup>th</sup> quarter 2012.

Specific tasks to be accomplished:

- Retrofit the splash pad to provide water from a potable water supply;
- Purchase land for construction of a wetlands treatment system for stormwater;
- Construct the first cell for treatment; and
- Implement the preferred alternative solution for the highest priority drainage basins A, E, and F.



## Resource and Citizen Benefits Analysis

The city presently has very limited stormwater drainage improvements. Peak runoff causes flooding and high short-term flows to Spring Creek. The new system will hold and treat stormwater, allowing for more consistent flow in the creek. The constructed wetlands will provide some benefit for wildlife propagation and viewing. The reduction of impact to the creek from high, short-term runoff will improve water quality in the creek, benefitting fish and wildlife. The community has been taking water from the creek for a splash park. The proposed project will eliminate the creek as a water source and provide potable water for the park, benefitting public health.

The project also may be coordinated with the DOT to use the constructed wetlands to help treat runoff generated from the highway corridor.

## Project Management

An adequate project management plan was provided. The plan includes procurement procedures and on-going public involvement. The city has staff to manage the project during implementation and provide ongoing operations and maintenance of the new facilities.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$ 120,500	\$120,500
Professional & Technical	\$0	\$0	\$110,000	\$110,000
Construction	\$100,000	\$0	\$769,500	\$869,500
Total	\$100,000	\$0	\$1,000,000	\$1,100,000

The DEQ staff indicated that SRF loan funds may not be available within the budget period for the project. Land acquisition costs appeared to be high. The TSEP grant is under consideration.

## Environmental Evaluation

The project should benefit the local environment in Ronan through the reduction of high levels of runoff, reduced soil erosion, and provision of a more consistent, better quality discharge to the local receiving stream.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## Project No. 78

**Applicant Name** Fromberg, Town of  
**Project Name** Water System Improvements

<b>Amount Requested</b>	\$ 100,000	
<b>Other Funding Sources</b>	<u>\$ 146,506</u>	SRF
<b>Total Project Cost</b>	\$ 246,506	

**Amount Recommended** \$ 100,000

### **Project Summary**

#### Project History

The Town of Fromberg constructed a shallow horizontal infiltration well near the Clarks Fork River in the 1920s, when the water system was originally constructed. A 35-foot deep vertical well and a 300,000-gallon storage tank were added to the system in 1996. The DEQ ordered Fromberg to take the horizontal well off-line in 2009 because of the high potential for surface water contamination. Currently, the town has only one active water supply source. Fromberg has obtained planning funds to evaluate the system and determine priorities for system improvements. A consulting engineer has recommended that the town replace the horizontal well with a second vertical well located near the existing vertical well. A new standby power generator and an updated chlorine disinfection system and control building would be included in the improvements.

#### Technical Approach

The PER evaluated the entire water system and determined that the town should place a priority on developing a redundant source. Four source alternatives were considered. The preferred alternative consists of constructing a second vertical well near the existing well, adding standby power and a new sodium hypochlorite treatment system, and constructing a new control building. The town would only have to complete a redundant well permit application and provide construction and well pump test results to DNRC in lieu of pursuing a new water right permit. The technical approach appears to be complete.

Benefits to natural resources include further use of an existing natural resource without additional withdrawal.

Project milestones include obtaining funding by June 2011, completing the engineering design in 2011, securing DEQ approval and bidding in early 2012, and completing construction in 2012.

Specific tasks to be accomplished:

- Construct and pump test a new vertical groundwater well;
- Construct a new control building;
- Provide backup chemical feed equipment; and
- Install auxiliary standby power.

### **Resource and Citizen Benefits Analysis**

Construction of a redundant water source and installation of new flow measuring equipment are expected to improve development and management of an existing groundwater resource. The project also will have a public use benefit.

### **Project Management**

The proposed project management plan and project schedule appear acceptable. A CIP and a PER have been completed. The design engineer will be selected in accordance with required procurement

procedures. Responsibilities for the Town and the engineer have been assigned. One working meeting and one public hearing were held following the required advertisement periods. Project progress will be discussed at council meetings following advance notices. The proposal includes a revision to the CIP.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$20,506	\$20,506
Professional & Technical	\$0	\$0	\$40,000	\$40,000
Construction	\$100,000	\$0	\$86,000	\$186,000
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$146,506</b>	<b>\$246,506</b>

The proposal includes coordinated development of a CIP and the project would use primarily non-state funding sources. Existing water and sewer rates are \$36.70 and \$11.70 per month, respectively. After completion, the projected average residential water user fee will be \$39.26 per month. The new combined rate will be \$50.96, compared to the 2000 combined target rate (\$56.00) for Fromberg. Approximately 486 residents would benefit from the project. If adequate funding is not received, the town would likely proceed with the project given the importance of having at least two sources of water.

### Environmental Evaluation

The proposed project will not result in adverse environmental impacts except for reasonably expected temporary construction impacts. A uniform environmental checklist was prepared and no adverse comments were received.

### Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 79

**Applicant Name** Jordan, Town of  
**Project Name** Water System Improvements

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 6,000 Applicant  
\$ 500,000 TSEP  
\$ 532,000 RD Grant  
\$ 532,000 RD Loan  
\$ 450,000 CDBG  
**Total Project Cost** \$2,120,000

**Amount Recommended** \$ 100,000

### Project Summary

#### Project History

The Town of Jordan water distribution system was originally constructed in the 1950s. The water and sewer systems were evaluated in 2002, resulting in water system upgrades in 2004. In 2004 the water main under Montana Highway 200 was replaced as part of a highway reconstruction project. Additionally, a backup well and a new 12-inch transmission line from the water tank were installed in 2004. Jordan has been improving its wastewater treatment system since 2004 and that work was completed in 2008.



The Jordan water distribution system still has deficiencies that have not been addressed. The existing water tank is the largest problem because it is in very poor structural condition, is leaking, and is located at too low an elevation to provide adequate system pressure. The water tank is in danger of collapsing and is unsafe. The water mains are about 60 years old, are in poor condition, are undersized, and are inadequately looped. Measured leaks in the water system in 2008 were 1.4 million gallons. These water main problems compromise the ability to provide adequate fire protection and clean, safe water.

### Technical Approach

The PER evaluated the existing water system, considered alternatives to address the critical problems, and selected a preferred alternative to correct deficiencies within the water system. The PER evaluated construction of a new stand-pipe and new elevated water storage tank at the location of the existing storage tank, and construction of a new water tank at a higher location. The PER also analyzed the water distribution system to determine where existing water main size and looping are inadequate and identify priorities for piping upgrades.

The PER defined the preferred alternative as a two-phase project. Phase 1 will replace the existing 230,000-gallon water storage tank with a 275,000-gallon buried concrete water storage tank, situated at a higher elevation and connected to the system with 2,020 feet of new 14-inch water main. Phase 1 will also upgrade the highest priority water main by replacing 2,275 feet of existing four-inch water main with eight-inch water main and adding 1,922 feet of new eight-inch water main to loop dead-ends. Phase 2 of the project will replace 2,720 feet of existing four-inch water main with eight-inch water main and add 1,000 feet of new eight-inch water main to loop dead ends. Project design is anticipated to be completed in 2011, and construction is anticipated during 2012.

Specific tasks to be accomplished:

- Construct a new 275,000-gallon buried concrete water tank at a new, higher elevation;
- Install 2,020 feet of new 14-inch water main from the new tank to the existing system;
- Replace a total of 4,995 feet of existing four-inch water main with new eight-inch water main;
- Install a total of 2,922 feet of new eight-inch water main to loop existing dead-ends; and
- Provide engineering design and construction engineering of the proposed project.

### **Resource and Citizen Benefits Analysis**

The proposed project will conserve groundwater resources and energy by reducing water system leaks. Measured leaks in the water system in 2008 were 1.4 million gallons. Upgraded water mains will provide increased protection of public health and safety, and promote economic development.

### **Project Management**

The proposed project management plan is adequate. Jordan, with assistance from the grant administrator and engineer, will provide the project management. In accordance with state procurement standards the town has procured a project engineer who will perform the design, supervise bidding and contractor procurement, and supervise construction. Jordan will procure construction services in accordance with state procurement standards. The contracted grant administrator will manage the grant and loan funds in accordance with the grant requirements. With award of the grant funding, project design is anticipated to be completed in 2011 and construction is anticipated during 2012.

### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$95,000	\$95,000
Professional & Technical	\$0	\$0	\$360,000	\$360,000
Construction	\$100,000	\$0	\$1,565,000	\$1,665,000
Total	\$100,000	\$0	\$2,020,000	\$2,120,000

Due to the large cost of the proposed project, the project is largely dependent on the award of grant funding. Project design will begin when TSEP grant funding is awarded. Other grants and loans will be used to complete design and construction. Award of all grants requested with either an RD or SRF loan will allow both phases of the project to be completed. If only partial grant funding and either an RD or SRF loan is obtained and either a RD or SRF loan, then phase 1 may be completed. Phase 2 work would be delayed until alternate funding is available. If no grant funding is obtained and only loans are available, phase 1 may be completed, but this also would result in a significantly higher user rate. If all grants are awarded, the residential monthly water-only user rate will increase from \$18.37 per month to \$31.20 per month, for the 235 residential users. With fewer grant funds, the residential monthly water-only user rate increases would be higher and, potentially, as high as \$62.06 per month (if no grants are awarded and only phase 1 is completed).

## Environmental Evaluation

The proposed project would have few environmental impacts. Most of the construction work is proposed along existing streets or roads and will not contribute to increased environmental impacts. The new water tank site will require a cultural resource inventory to determine if construction of the new water tank will impact cultural properties. Portions of the city streets may be within floodplains. Water main construction within these streets should not impact the floodplain because all work will be within existing disturbed areas.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 80

<b>Applicant Name</b>	Lower Yellowstone Irrigation Project (LYIP) Board of Control (BOC)	
<b>Project Name</b>	Lower Yellowstone On-Farm Water Conservation Measures	
<b>Amount Requested</b>	\$ 100,000	
<b>Other Funding Sources</b>	\$ 227,500	LYIP BOC
	<u>\$ 310,000</u>	Local Producers
<b>Total Project Cost</b>	\$ 637,500	
<b>Amount Recommended</b>	\$ 100,000	

## Project Summary

### Project History

The LYIP is comprised of three irrigation districts – Lower Yellowstone Irrigation District #1, Lower Yellowstone Irrigation District #2 (located in North Dakota), and Savage Irrigation District. The project involves an on-going effort to improve water conservation and install measures that will reduce water consumption. Prior efforts have included USDA-NRCS EQIP funding to install center pivot irrigation systems, but the program benefited only two or three producers a year. Currently the project is seeking USDA-NRCS AWEF funding to convert 9,180 acres of flood-irrigated farmland to sprinklers and to improve 3,000 acres of flood-irrigated farmland. Because delivery of the water to farms will be in pipes instead of open ditches, which have approximately 40% conveyance losses, the reduction in diversions from the Yellowstone River will total approximately 17,200 acre-feet per year. Secondary benefits to reduced diversions include more water available to enhance endangered pallid sturgeon passage at the Intake Diversion site (along with a proposed improved diversion and fish screen structure) and more water left in the river to increase power production at downstream hydropower facilities.

## Technical Approach

The preferred alternative is the only alternative proposed. The improvements proposed are state-of-the-art agricultural irrigation conservation measures. The pipe that would be purchased by RRGL funds is only a part of the overall conservation measures proposed for the project. For the whole project, approximately 17,400 lineal feet of pipe will be used for water delivery. Pipe diameters are anticipated to range from 15 to 36 inches. The purpose is to replace open-ditch laterals currently used for water delivery which have high water loss during use and create obstructions to center pivot systems. The new pipe will support the installation of center pivot systems and improvement on flood irrigation systems. Details on how the improvements will be initiated have not been developed yet because NRCS AWEF funding has not yet been secured and the number of producers signed up for the program has not yet been determined. Concerns with the application include: (1) lack of detail of the proposed improvements and the uncertainty of obtaining funding from other sources; (2) the question of whether pipe purchased with RRGL funds will be used only in Montana or if some might be used in the irrigation district in North Dakota (however 66% of the total project is in Montana and all of the project operates under a Montana water right, while RRGL funds will go toward only a quarter of the total pipe needed, which could all be contained within Montana; the applicant estimates 13,920 lineal feet of pipe would be used in Montana, far more than the pipe purchased with RRGL funds); and (3) many benefits listed in the RRGL application will not be realized until other funding is obtained for proposed improvements outside of the scope for RRGL-funded improvements; if RRGL funds are obtained, there is a chance they would not be spent if NRCS funding does not materialize. The total project is very complex with many funding sources involved. The overall benefits can be significant and will conserve substantial amounts of water in the Yellowstone River.

Project schedule is mostly dependent on USDA-NRCS funding. The applicant is vague on the schedule but estimates that RRGL funds would be used between 2011 and 2016, based on the requirement that USDA-NRCS payments cannot exceed five years.

Specific tasks to be accomplished:

- Individual producers procure USDA-NRCS funds for irrigation improvements;
- Irrigation system designed, surveyed, laid-out;
- Pipe procured with RRGL funds or USDA-NRCS funds;
- Trenches dug by producers or project sponsors;
- Pipe installed, replacing open-ditch laterals; and
- Pipe tested, backfilled and compacted, reseeded.

## **Resource and Citizen Benefits Analysis**

As part of a larger project funded primarily through NRCS AWEF funds, the RRGL grant money would be used to purchase irrigation delivery pipe for a conservation project that is projected to reduce on-farm irrigation by 10,300 acre-feet and Yellowstone River diversions by 17,200 acre-feet per year. Increased irrigation efficiency will reduce water costs to producers and improve crop yields.

Reduced diversions will enhance pallid sturgeon recovery (an endangered species) by improving flows in the Yellowstone River, allowing improved fish passage at the Intake Diversion site (along with a proposed improved diversion and fish screen structure). The project could also mitigate to a small degree effects of a severe drought (estimated to occur once in 50 years).

No letters of support were included in the application. A survey was sent to producers asking if there was interest in AWEF participation and it was estimated that 60% of the producers would participate in the project if expected pay rate percentages are achieved.



## Project Management

No specific project management plan was submitted. Producers and LYIPBOC staff would perform pipe installation and it was felt by the applicant that limited staff management would be needed. An "on-board" engineer who would direct surveying and pipe design would accomplish field supervision. No contracted services were anticipated. The project is still in a conceptual stage and is not ready for construction. If NRCS funding is obtained, implementation of pipe installation using RRGL funds could begin in the next two years. No public involvement is needed for on-farm delivery system improvements.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$0	\$0
Professional & Technical	\$0	\$0	\$10,500	\$10,500
Construction	\$100,000	\$0	\$527,000	\$627,000
Total	\$100,000	\$0	\$537,500	\$637,500

The RRGL grant money is targeted to purchase approximately one-fourth of the estimated 17,400 lineal feet of pipe for the project. Irrigation improvements are expected to reduce on-farm irrigation application by 10,300 acre-feet per year.

The portion of the project partially funded by RRGL funds is a small part of a much larger (\$6,275,846) project whose primary funding source would be the AWEPP program administered by the NRCS. The larger project consists of installing center pivot sprinklers and gated pipe in addition to the on-farm piping included in the RRGL funded portion of the project. The entire project (if funded) would begin in 2011 and would conclude in 2016. A breakdown of administrative, professional and technical and construction costs for the complete project was not provided by the applicant.

The portion of the larger AWEPP project that involves RRGL funds for pipe purchases is approximately \$637,500. RRGL grant money is targeted for purchasing approximately one-fourth of the 17,400 lineal feet of pipe anticipated for the entire project. Reviewer concern about the finances for the project stems mainly from the applicant's contention that no administrative costs are needed. The project is very large, even the relatively small portion involving pipe installation, and administrative oversight of numerous funding sources appears necessary. The project will affect 55,700 acres of farmland. Current assessment is \$31 per acre. The projected assessment will be \$32 per acre. Applicant is in the process of trying to secure NRCS AWEPP funding for farm conservation measures. No backup plan was presented to address options if funding sources are not realized.

## Environmental Evaluation

Applicant's environmental checklist listed no impacts from the project. Reviewer noted that several items are potentially beneficial (such as surface water quantity and fish habitat), and the project may have adverse impacts to groundwater (with reduced water application) and wetlands (depending on where construction takes place but no details were given in the application).

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## **Project No. 81**

**Applicant Name** Butte-Silver Bow Consolidated City-County Government  
**Project Name** Big Hole River Pump Station Rehabilitation

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 264,698 Applicant  
**Total Project Cost** \$ 364,698

**Amount Recommended** \$ 100,000

### **Project Summary**

#### **Project History**

The BHR pump station transmits water over 30 miles and provides more than 65% of the water supply to Butte. The pump station was listed on the National Register of Historic Places in 1980 because the structure is more than 100 years old and contains five generations of pump technology in the original setting. The Butte-Silver Bow Consolidated City-County Government requests RRGL funds to rehabilitate the BHR pump station, to conserve energy, and permit public access to the site. The recreation site will include an interpretive component to explain the significant public investment in the pump station and the complexities required to maintain a reliable public water supply that is 30 miles from its source and on the opposite side of the Continental Divide. The interpretive component will also increase public awareness of conservation through consumer use of municipal water. This project is a part of a much larger dam replacement project and is responsive to public input that is documented in the Butte-Silver Bow growth policy of 2009.

#### **Technical Approach**

Butte-Silver Bow proposes to weatherize the BHR pump station, construct a public access recreation area, install interpretative/educational signage, and repair a leaky intake pipe. This project does not contain an engineering component for water management. The applicant included all relevant technical materials relating to the repairs to the building and construction of maintenance facilities.

In addition to the proposal, the applicant considered a no action alternative, construction of a new pump station, and granting the existing facility to a state or federal agency. The project is scheduled to begin in July 2011, with final reporting in December 2012 and this schedule seems achievable.

Specific tasks to be accomplished:

- Repair and replace windows and doors;
- Develop educational materials and interpretative signage;
- Install a boat ramp;
- Install Americans with Disabilities Act-compliant railings for safety; and
- Install public access components of recreation site to include parking, signage, pit toilets, waste management, and picnic tables.

### **Resource and Citizen Benefits Analysis**

This project will conserve energy and hopes to encourage individual conservation efforts by water users as a result of increased public awareness of the connection between a valued waterway and the municipal water supply. The project will also develop recreation activities on a popular river. Recreation and conservation organizations and FWP have expressed support for this project.

The benefits of this project are largely historical, as this pump house will be replaced by a new one in coming years. It will predominantly provide a picnic area, parking area, and signs to educate the public, along with the upgrades to the pump house and some fishing access.

## Project Management

The project management team includes the Butte-Silver Bow public works and planning director and the historic preservation officer. This team has experience conducting similar state-funded public projects. This project can be implemented with minimal to no delay because Butte-Silver Bow already has solicited bids for much of the planned work.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$22,802	\$22,802
Professional & Technical	\$0	\$0	\$50,396	\$50,396
Construction	\$100,000	\$0	\$191,500	\$291,500
Total	\$100,000	\$0	\$264,698	\$364,698

Butte-Silver Bow has committed \$264,698 to this project. The budget is adequate to complete the project.

## Environmental Evaluation

There are no negative environmental impacts associated with this project. Weatherization will conserve energy.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## Project No. 82

**Applicant Name** Manhattan, Town of  
**Project Name** Water System Improvements

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 750,000 TSEP  
\$ 600,000 STAG  
\$ 711,872 SRF  
\$ 200,000 EECBG  
\$ 12,000 Applicant  
**Total Project Cost** \$2,373,872

**Amount Recommended** \$ 100,000

## Project Summary

### Project History

Manhattan has been working toward construction of a water storage tank for its residents for more than 10 years. The community needs improvements for greater system reliability, pressure control and fire protection. Since 2005, efforts to reach a feasible funding plan and at a reasonable cost to rate payers have been difficult due to lack of growth, water rights issues and the economic downturn. In the interim, Manhattan has completed or committed to projects that provide residents with the safest and most reliable water system possible. Projects that have been completed or are in progress include backflow prevention, installation of water meters, emergency/backup power at all supply sources, and replacement of old and leaking transmission mains.



## Technical Approach

The planning process generally followed the PER outline with the necessary sections included. The process focused on the water tank replacement and considered only two options for tank replacement. The tank had been previously designed and this may have biased the alternatives analysis. A new water storage tank will allow significant energy savings in the community by allowing for improved pressure control in the system, rather than pumping continuously. The project schedule indicated design would initiate in the 2nd quarter 2011 and the work would be completed in 3rd quarter 2012. This schedule is aggressive and would require design initiation prior to grant award.

Specific tasks to be accomplished:

- Install 500,000-gallon water storage tank;
- Install 1,100 feet of 12-inch water main and 385 feet of 10-inch main; and
- Install telemetry system for controlling tank, wells and booster pumps.

## **Resource and Citizen Benefits Analysis**

Installation of a water storage tank would allow the town to better manage its water system through telemetry and controls, eliminating a complex manual control system the operators currently use. The water system requires continual manual operation of its pumps to maintain system pressure because there is no stabilizing water storage. The system pressure provided by a water storage tank will allow the town to program its pumps to rest during periods of low demand. Operating the well pumps and booster pumps only when needed will result in considerable energy savings. The amount of energy that can be conserved is significant and was quantified in the planning document. The storage tank will provide improved fire protection and emergency storage. The project will provide a public health benefit, address the community growth issue and would be supported with co-funding from other sources

## **Project Management**

The project management plan is adequate. Future public involvement was not discussed. A schedule was included in the PER. The community is experienced in managing projects of this type.

## **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$ 22,000	\$0	\$ 67,000	\$89,000
Professional & Technical	\$ 40,000	\$0	\$190,250	\$230,250
Construction	\$ 38,000	\$0	\$2,016,622	\$2,054,622
Total	\$100,000	\$0	\$2,273,872	\$2,373,872

The financial plan for the project is quite complex, relying on several sources of unsecured grant and loan assistance to complete the budget requirements. A STAG grant and receipt of a full \$750,000 TSEP grant are required in the budget. Even though the town has an existing design for the project, the cost of reviewing and updating the design by the current engineering firm may be underestimated. The proposed pedestal storage tank may not be the least cost option although such tanks are generally considered to be more aesthetic than a legged storage tank. Backup plans are limited, given the cost of the work.

## Environmental Evaluation

No significant adverse impacts are anticipated with this project as long as proper construction practices are followed. The new tank will create a visual impact which can be mitigated somewhat with design and painting.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 83

<b>Applicant Name</b>	North Powell Conservation District	
<b>Project Name</b>	Blackfoot Irrigation Efficiency	
<b>Amount Requested</b>	\$	60,000
<b>Other Funding Sources</b>	\$	75,190 MJ Murdock Charitable Trust
	\$	5,000 Blackfoot Challenge
	\$	4,125 Bonneville Power Administration
	\$	50,000 RBC Blue Water Project
	\$	20,000 Steele-Reese Foundation
	\$	12,000 Chutney Foundation
	\$	10,000 NRCS
	\$	10,000 DOE
	\$	10,000 WC Kenney Foundation
	\$	10,000 Compton Foundation
	\$	5,000 Foundation for Sustainability & Innovation
<b>Total Project Cost</b>	\$	219,250 (total funding \$271,315)
<b>Amount Recommended</b>	\$	60,000

## Project Summary

### Project History

The Blackfoot Irrigation Efficiency project seeks to expand on work completed with previous RRGL grants to conserve energy and water, reduce agriculture production costs, promote sustainable use of water, increase the use of sustainable agriculture practices, enhance the rural lifestyle, and improve the stability of agricultural communities in the Blackfoot River watershed, North Powell County, Montana. Previous work with landowners and irrigators began in 1990s by developing partner cooperation, focused on improving natural resources in the watershed. The project will continue that effort by working with irrigators throughout the watershed and focus on practices to conserve and manage energy and water resources.

### Technical Approach

The North Powell CD proposes to reduce dewatering, leading to more resilient water resources in the watershed by evaluating irrigation systems and developing recommendations for more efficient use of water and energy. The applicant also considered no action and reduced scope of work alternatives.

The application did not clearly define the scope of work, nor did it include a clear and complete comparison of the alternatives. The proposed alternative presents an opportunity to meet the objectives of the project and was selected based on project goals.

Specific tasks to be accomplished:

- Conduct energy evaluations of irrigation systems;
- Established maintenance schedules for irrigation equipment;
- Encourage the use of irrigation scheduling and consideration for environmental factors in irrigation decisions; and
- Further develop the Blackfoot Drought Response Implementation plan.

### Resource and Citizen Benefits Analysis

In combination with stream restoration and water conservation efforts, the project is intended to lead to more resilient water resources in the watershed by promoting sustainable use and management of water and energy consumption. The project will conduct energy evaluations which, potentially, could to conserve 3,450 kWh of energy and 26 acre-feet of water, annually. If half of the irrigation systems in the watershed are put on maintenance programs, a total savings of 172,500 kWh of energy and 1,300 acre-feet of water annually could occur.

Upgrades to the irrigation infrastructure and management of irrigation under a schedule could reduce dewatering, increase instream flows, and improve fisheries. If the watershed is managed correctly under irrigation scheduling and upgrades are made to the infrastructure, there will be an indirect improvement to the stream flows necessary for fisheries. Dewatering as a result of irrigation is cited as the limiting factor for fisheries and water quality of the system.

### Project Management

The North Powell CD lacks the staff capacity and experience to successfully administer the grant and manage the project. The Blackfoot Challenge will be responsible for the management and coordination of the project. The Blackfoot Challenge will hire a contractor, through a limited solicitation process, to conduct the irrigation evaluations. The project implementation schedule is vague and indicated a three year implementation period, followed by a maintenance phase. The project is still in the development stage.

The project will attempt to work with all irrigators in the watershed as part of this project. The North Powell CD and the Blackfoot Challenge will conduct public workshops and outreach. Partners have shown support for the project, but the application did not document private support.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$21,940	\$0	\$82,060	\$104,000
Professional & Technical	\$38,060	\$0	\$77,190	\$115,250
Construction	\$0	\$0	\$0	\$0
Total	\$60,000	\$0	\$159,250	\$219,250

The RRGL grant is 27% of the project budget. The grant funds are extensive and the project has support from a large charitable trust to support landowner water conservation practices. The applicant has good budget documentation for each phase of the project. They have more funds in budget than the project costs require. The project should result in a quantified cost savings to all irrigators who participate in the program.



## Environmental Evaluation

The project will have an overall positive impact on soil, water, and vegetation resources in the watershed by conserving water and energy. The project may also improve land use compatibility by increasing irrigation efficiency and providing incentives to irrigators to maintain agricultural land in production, rather than converting the land to development related to growth. Short-term environmental effects related to maintenance and equipment upgrades can be mitigated with best management practices.

## Funding Recommendation

The DNRC recommends grant funding of \$60,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 84

**Applicant Name** Kalispell, City of  
**Project Name** Woodland Park Pond Remediation

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 93,685 Applicant

**Total Project Cost** \$ 193,685

**Amount Recommended** \$ 100,000

## Project Summary

### Project History

Inflow to the Woodland Park Pond was originally maintained by a well drilled in 1974 which provided continuous artesian flow into the east end of the pond. In the 1980s, the well was capped and a pump was installed to increase the pressure so the water could be used for the park irrigation system. Settling of the well house has caused some piping failures and the artesian pressure of the well has declined. These two issues have resulted in a reduction of the inflow to the pond and the water quality in the pond has significantly deteriorated. This project proposes to improve the water quality in the pond by repairing the existing well infrastructure, stabilizing eroding banks, and improving the outlet structure.

### Technical Approach

The applicant considered three alternatives for repairing the well: rehabilitating the existing well, drilling and completing a new supply well, and connecting to the city public water supply system. Kalispell proposes to rehabilitate the existing well because the cost of drilling and completing a new supply well is more than 2.5 times the other two alternatives. The expected operation costs, if the existing well is rehabilitated, would be less than the cost of water that would be delivered by the public system. The engineering and permitting for this project would begin in July 2011, with construction completed October 2012. The applicant did not consider alternative bank stabilization methods for this project.

Specific tasks to be accomplished:

- Secure funding;
- Initiate design by assessing the existing infrastructure then preparing construction drawings and specifications;
- Apply for and obtain necessary permits;
- Complete the rehabilitation work of the well, piping and pond outlet;
- Remove existing wooden posts and install field stone along the bank; and
- Construct wetland at south end of south leg of the pond.

## Resource and Citizen Benefits Analysis

This project will conserve energy by installing a more efficient pump. This project will provide for improved management of groundwater by installing a flow meter on the well and improved management of surface water by installing a new outlet structure. This project will preserve groundwater by preventing backflow to the aquifer. Surface water, fisheries, and water fowl habitat will be preserved by improving water quality. Recreation will be preserved by improving control of the water levels.

## Project Management

The proposed project management is adequate. The City of Kalispell Department of Parks and Recreation will manage the project. Engineering and environmental consulting firms have already been selected through a structured, competitive process to provide the design and permitting for this project.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$13,530	\$13,530
Professional & Technical	\$6,187	\$0	\$20,592	\$26,779
Construction	\$93,813	\$0	\$59,563	\$153,376
Total	\$100,000	\$0	\$93,685	\$193,685

Currently, the \$20,592 matching fund for the professional/technical budget item is uncommitted. Those funds are necessary to complete the design in order to move forward with construction. The construction of the wetland at the outlet of the pond was not included in the cost estimate.

## Environmental Evaluation

There are no adverse environmental impacts other than the temporary impacts due to construction. This project will potentially benefit groundwater resources and surface water quality as well as wildlife habitat and access to recreation. This project will also preserve the park as a cultural resource and protect the health and safety of park visitors.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000.00 upon development and approval of the final scope of work, administration, budget, and funding package.

## Project No. 85

<b>Applicant Name</b>	Montana Department of Natural Resources and Conservation		
	Water Resources Division		
<b>Project Name</b>	StreamStats Interactive Web Map Application		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$	46,000	Legislation Appropriation (State Water Plan) to DNRC
	\$	130,000	DOT Research Grant to USGS
	\$	5,000	DOT (Engineering)
	\$	20,000	DNRC WRD (Floodplains)
	\$	2,500	DNRC WRD (Floodplains)
	\$	56,500	DNRC WRD (Water Management)
	\$	197,333	USGS Cooperative Assistance to States Program
<b>Total Project Cost</b>	\$	557,333	
<b>Amount Recommended</b>	\$	100,000	

## **Project Summary**

### Project History

Availability of the StreamStats Interactive Web Map Application will enable public and private users to quickly summarize stream flow statistics for any location in Montana. Potential customers for this service include homeowners, engineering consultants, FWP, the DEQ, and DOT. The project would provide statistics that would be useful for water supply planning, management, water rights adjudication, water quality regulation, biological habitat assessment, floodplain delineation, and infrastructure design.

### Technical Approach

WRD proposes to improve existing regression equations based on data available in GIS databases and to update gaged station statistics with flow data from the past ten years. These updated equations will be region- or stream-specific and will be incorporated into an easy-to-use web interface. The presence of surface water during different storm or low flow events will be studied. These events would include the 100-year flow for floodplain analysis and bridge design, the 7Q10 flow for subdivision, and TMDL calculations. WRD also considered no action. With no action, water resource professionals would individually calculate flow statistics. Estimates of flow statistics may involve several personnel and significant time and may be performed with inconsistent scientific validity and documentation.

The project goals for StreamStats have merit. The project could be strengthened by incorporating public outreach to help resolve technical issues. Concerns include whether the process and product will be adaptable to a more precise hydrography in the future (such as 1:24,000 scale maps), how water rights and diversions will be addressed in ungaged streams, and how local meteorological conditions will be identified to specific basins.



Specific tasks to be accomplished:

- Develop flow statistics for gaged streams;
  - Identify suitable gages;
  - Use log-Pearson III plus where appropriate period of record effects, stationarity, and regional mixed population analysis; and
  - Prepare and publish draft and final report.
- Develop flow statistics for ungaged streams;
  - Compute basin characteristics based on available GIS layers;
  - Compute regression equations based on basin characteristics; and
  - Prepare and publish draft and final report.
- Develop Interactive Web Map Application; and
- Implement web site through public roll out.

### Resource and Citizen Benefits Analysis

This project will enhance surface water conservation and management. The project will promote efficient quantification of surface water through the uniform calculation of stream flow statistics, especially when combined with irrigated lands mapping proposal and the NRIS water rights database. The StreamStats Web Application tool will help water users, private contractors, and watershed groups better manage the renewable resource. This program will include gaged and ungaged streams and will be extremely useful for public and private customers.

The addition of the past eleven years of gaged data into hydrologic statistics will provide Montanans with the latest data available. The ease of the flow statistics tool will benefit the public through reliable quantification of high flow or low flow events for such applications as subdivision development, bridge design, floodplain characterization, and TMDL determination.

### Project Management

The proposed project management plan is adequate. USGS will be responsible for the technical tasks, interim reports, StreamStats Interactive Web Map Application, and public presentations. DNRC WRD will provide hydrologists, GIS specialists and planning staff. Planning and several public presentations have been completed. A survey and questionnaire will be sent to interested personnel in the next few months to better define the project scope. The project is expected to be complete by 2013.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$1,000	\$0	\$667	\$1,667
Professional & Technical	\$99,000	\$0	\$456,666	\$555,666
Construction	\$0	\$0	\$0	\$0
Total	\$100,000	\$0	\$457,333	\$557,333

The funding strategy is appropriate with a mix of in-kind and federal (USGS) and State (DOT, DNRC) matching funds. It was not stated where funding may be appropriated if the RRGL grant is not recommended.

The overall budget to complete this project may be excessive and the estimated costs for web development and report writing might be high. USGS has completed StreamStats applications in many other states, and many components of the project should be similar or applicable to this project. Comments from secondary reviewers supported this opinion, with specific mention that the cost of the web development and report writing and reviewing may be high. There was concern that the USGS did not partner with NRIS, given the overlap of water information goals between the two agencies. The proposed work is both technical and large in scope. There is considerable public interest in the project and the project should include adequate reports and public presentations.

## Environmental Evaluation

The positive environmental benefits are that StreamStats will provide hydrological information on which to base decisions for surface water quantity and floodplain management.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 86

<b>Applicant Name</b>	Libby, City of		
<b>Project Name</b>	Wastewater Collection System and Treatment Facility Upgrades		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$	12,000	Applicant
	\$	1,670,350	RD Loan
	\$	54,650	RD Grant
	\$	450,000	CDBG
	\$	750,000	TSEP
<b>Total Project Cost</b>	\$	3,037,000	
<b>Amount Recommended</b>	\$	100,000	

## Project Summary

### Project History

The Libby wastewater system consists of an oxidation ditch for treatment and approximately 20 miles of collection system piping, ranging in size from 6-inches to 24-inches in diameter. There are three sewage lift stations in the collection system. Treated wastewater is discharged into the Kootenai River. The existing WWTP was constructed in 1986 and many of its mechanical components are reaching the end of their useful life. Two of the lift stations need replacement due to age, access issues, and non-compliance with the current electrical code. *E.coli* limits in the new discharge permit will require installation of a new disinfection system by January 1, 2010. The sludge dewatering system is on the verge of permanent failure. Temporary repairs have been made but parts are no longer available. The treatment plant control system, influent pump station, bar screen, grit chamber, and clarifier mechanical mechanisms have reached the end of useful life. A third clarifier must be constructed to meet future flows. There is no scum removal system in the oxidation ditch. Thus, excessive total suspended solids periodically occur in the treated effluent. Libby proposes to install a new dewatering system and disinfection system within 12 months because replacement of the the sludge dewatering system is urgent and the DEQ imposed a tight schedule. Libby will replace the two lift stations and the remaining aging components at the WWTP in 2012 and 2013 if the city is successful in obtaining funding.

### Technical Approach

Libby evaluated no action and rehabilitation of the existing lift station as alternatives to the proposed replacement with a new submersible lift station. Libby also evaluated no action and rehabilitation as alternatives to the proposed replacement of some of the aging components. Libby did not evaluate replacement of the oxidation ditch nor did the city evaluate combining some of the headworks components into one building. The application did not include either a net present worth analysis or an estimate of costs for O&M. The proposed improvements at the wastewater plant will provide better treatment, preserving the water quality of the Kootenai River. Energy efficient pumps and components will be installed to conserve energy. The project is scheduled to begin construction in the second quarter 2012 and be complete by July 2013.

Specific tasks to be accomplished:

- Replace the Montana Avenue lift station with a new submersible lift station;
- Replace the city hall lift station with a new packaged grinder pump system;
- Replace the control system and install backup power at the WWTP;
- Rehabilitate the existing influent pump station at the WWTP;
- Replace the existing mechanical bar screen at the WWTP;
- Complete oxidation ditch improvements, (scum removal system, new mixers and RAS flow meter replacement);
- Replace the existing grit chamber at the WWTP; and
- Rehabilitate the existing clarifiers and construct a third clarifier at the WWTP.

### Resource and Citizen Benefits Analysis

This project will include some energy conserving measures. New energy efficient mixers will be installed in the oxidation ditch. Energy efficient pumps will be installed in the headworks. A new control system will allow system operators to more efficiently manage blowers and other mechanical components at the WWTP. The project will preserve the water quality of the Kootenai River by improving the quality of the WWTP discharge. Improved effluent quality will also be beneficial to the fishery and aquatic life in the river.

Completion of the project will increase the capacity of the WWTP and allow continued growth in the community. The project is coordinated with the Libby CIP. The Kootenai Business Park, Libby School District and Kootenai River Development Council submitted letters of support for the project. The project will conserve the fishery, will be used by the public, and will protect public health and safety by improving the WWTP discharge.

### Project Management

The project management plan is adequate. The management team consists of the mayor and city council, director of city services, the city clerk-treasurer, legal counsel, and the Libby engineers. The city has selected an engineer and will contract with the firm for the design and construction administration. The clerk-treasurer will administer the funding. Procurement will be monitored by the city attorney. Libby must obtain funding and complete design of the improvements before the city can proceed to construction. Construction is scheduled to be completed by July 2013. Public meetings will be held during the project.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$51,000	\$51,000
Professional & Technical	\$0	\$0	\$600,000	\$600,000
Construction	\$100,000	\$0	\$2,286,000	\$2,386,000
Total	\$100,000	\$0	\$1,377,448	\$3,037,000

Libby plans to fund the project with the RRGL, RD, TSEP and CDBG grants, an RD Loan, and local funds. The project budget and funding strategy are reasonable. Libby has submitted grant applications to the DNRC and the DOC. The RD application will be submitted in May 2011. None of the funding, except the local funds, had been secured at the time of the application. The city has indicated that if the loan amount becomes too great, it might not be possible to complete the entire project. The current population of Libby is estimated to be 2,847. Monthly wastewater user rates will increase from \$26.85 to \$33.58 as a result of the project. The current water system monthly user rate is \$39.88.



## Environmental Evaluation

The project will be constructed within the footprint of the existing WWTP and the existing lift stations. The project will not cause significant environmental impacts. Overall, the project will be beneficial to the environment by improving surface water quality.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 87

<b>Applicant Name</b>	Toston Irrigation District		
<b>Project Name</b>	Crow Creek Pumping Plant Rehabilitation		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$	42,120	Applicant
<b>Total Project Cost</b>	\$	142,120	
<b>Amount Recommended</b>	\$	100,000	

## Project Summary

### Project History

The Crow Creek Pumping plant, located about one-river mile upstream of Toston Dam on the Missouri River, provides irrigation water for 6,200 acres of farmland near Toston. The facility was constructed by the USBR circa 1953 and was later turned over to the Toston Irrigation District. The pump-floor of the facility has limited freeboard over water levels in the Missouri River because the design and construction of the facility pre-dated the Toston Dam. The plant has periodically flooded during high flows and when river ice creates an above-static pressure case in the river. In the winter, water has entered the pump house, pumps, and pumpworks and caused electrical and mechanical damage. Proposed rehabilitation work includes construction of an earthen berm along the river, a reinforced concrete wall in front of the pump house, and modifications to the pump house intake structure to reduce the risk of flooding and ice damage. This project will help to maintain an uninterrupted irrigation supply.

### Technical Approach

The project involves construction of an earthen berm upstream and downstream of the facility and construction of a reinforced concrete wall immediately in front of the intake structure in order to provide protection from flood water. Construction of the berm and wall will require coincident modification of the intake structure. The applicant also considered no action, construction of a continuous concrete wall, and modifications to raise the pumphouse floor above normal flood stage. The PER could have considered two other possible alternatives, construction of a sheet pile wall or complete relocation of the pumphouse structure. The application also stated that the pumps are nearly 60 years old and difficult to service because of long lead times for specialized parts. Yet, the applicant did not consider alternatives to modernize the pumps.

The project schedule includes design from July 2011 to October 2011. The construction bid process and regulatory compliance issues would then occur from November 2011 through March 2012. Construction would occur from October 2012 through April 2013, with project completion by June 2013. The proposed schedule might not be adequate to address regulatory compliance issues.

Specific tasks to be accomplished:

- Design the project;
- Obtain regulatory permits;
- Complete the construction bid process;
- Construct the berm and wall and rehabilitate the pump station; and
- Closeout the project.

### Resource and Citizen Benefits Analysis

The project has several resource and economic benefits. Rehabilitation of the pumphouse facility would clearly benefit the local economy and sustain the way of life for the irrigators of the Toston Irrigation District. If the facility were to be down for a season, impacts would likely be severe. The project also will ensure continuing augmentation of flow in Warm Springs Creek and, thus, will help conserve fish and other aquatic and terrestrial species.

One U.S. senator, the Broadwater County Board of Commissioners, the Broadwater County extension agent, and several local businesses and community members expressed support for this project.

### Project Management

The project is not yet ready for construction but construction during October 2012 through April 2013 is feasible. The project management plan is adequate. The irrigation district will serve as the project manager and grant administrator. The engineer and contractor are not yet determined. Coordination and communication among the irrigation district, engineer, contractor, and DNRC will be facilitated by the irrigation district. Public involvement will be facilitated through monthly irrigation district meetings and public comment will be considered throughout the project. The engineer will be required to submit monthly progress reports to the irrigation district, DNRC, and USBR.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$7,300	\$7,300
Professional & Technical	\$25,000	\$0	\$5,450	\$30,450
Construction	\$75,000	\$0	\$29,370	\$104,370
Total	\$100,000	\$0	\$42,120	\$142,120

The proposed budget appears appropriate, reasonable, and well defined. The proposed budget did not include the recurring cost of electricity for running the proposed pumphouse heaters. The application affordability data indicated an assessment of \$16.50 per acre and 6,200 acres served by the project, for a total of \$102,300. Therefore, the \$42,120 in matching funds from the irrigation district is feasible. The application does not include a backup plan for the project if RRGL funding is not available.

## Environmental Evaluation

In the short term, water quality may be slightly disturbed, but the project will have to comply with regulatory controls for short-term water quality standards. Long-term positive impacts of the project include preservation of irrigated farmland and habitat conservation for aquatic and terrestrial species associated with Warm Springs Creek. Long-term negative impacts of the construction include modification/channelization of the river channel by construction of the rip rapped berm and concrete wall. This impact is very minor, given the proximity to the Toston Dam. The application stated that necessary permits will be obtained for the project.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 88

<b>Applicant Name</b>	Em-Kayan Water and Sewer District
<b>Project Name</b>	Water System Improvements

<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 17,420 Applicant
	\$ 290,619 STAG
	\$ 500,000 TSEP
	\$ 94,975 SRF
<b>Total Project Cost</b>	\$1,003,014

<b>Amount Recommended</b>	\$ 100,000
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## Project Summary

### Project History

The Em-Kayan WSD operates a public water system that includes spring supplies, two groundwater wells, five storage tanks, disinfection, and a distribution piping network. The system is 50 years old, has failed several tests for total coliform, and line breaks in the thin wall steel pipe have been common. The system is not metered. A PER was completed in 2008. The PER recommended replacing the water mains, installing sampling stations in the distribution system, and installing water meters. The district proceeded with construction of phase 1 system improvement in 2010. The goal of the phase 2 project is to reduce or eliminate water system losses and protect the water system supply source by installing security fence around the springs and tanks.

### Technical Approach

The Em-Kayan WSD proposes to replace 2,840 linear feet of water main, install 12 fire hydrants and the associated service line connections, and install security fencing around the springs and storage tanks that supply water to the system. The district also proposes to complete a bacteria study. The district considered no action; a comprehensive, single phase replacement of the water mains; and, a phased approach for replacing water mains. The district also considered no action as an alternative to constructing the security fence around the water supply.

The district preferred to complete system improvements in two phases. The multiphase approach allows the district to resolve the distribution system needs and manage the user cost for the system improvements. The completed project will result in conservation of groundwater and allow the district to more efficiently manage a valuable natural resource. The security fencing around the spring supplies and storage facilities and the bacteria study will allow the district to protect and manage the resource. No



technical concerns have been raised with implementation and completion of the proposed project. The applicant proposes to complete the project funding package by June 2011 and complete project improvements by August 2012.

Specific tasks to be accomplished:

- Replace 2,840 linear feet of steel water main with eight-inch PVC pipe;
- Install 12 fire hydrants;
- Install security fencing around the spring supplies and the water storage tanks; and
- Complete a bacteria study.

### Resource and Citizen Benefits Analysis

The project has quantifiable resource conservation and management benefits. The project includes the replacement of leaky water mains which will result in improved conservation and management of the ground water resource and the public drinking water supply. The project is consistent with the Lincoln County Growth Policy. The project has good support from the community.

### Project Management

The proposed project involves four funding agencies and will require a significant grant administration effort. The district proposes to coordinate grant administration between the district treasurer and the engineer. The district treasurer will be responsible for document management and record keeping. The engineer will be responsible for all other administration tasks and will inform the funding agencies of project progress. The project management plan outlines the duties for the district and for the accountant, engineer, attorney, and funding administrator. The plan provides for a good staff of specialists to perform duties important to the project within their respective areas of expertise. The district will continue to inform the public through regularly scheduled board meetings and newsletters. The project management plan provides for contract management with regulatory and funding agencies, consultants, contractors, and other involved parties. The district has allocated an adequate budget for grant administration of the project. The project budget includes funding to support the financial and administrative aspects of the project. Land acquisition is not required and the project should be completed within the proposed project schedule.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$71,594	\$71,594
Professional & Technical	\$50,000	\$0	\$21,000	\$71,000
Construction	\$50,000	\$0	\$810,420	\$860,420
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$903,014</b>	<b>\$1,003,014</b>

The project budget is complete and includes adequate detail to show that the proposed budget is sufficient to complete the proposed project. The district and the proposed project are eligible for all of the funding sources in the proposed funding strategy. If the district is successful with its funding applications, the entire funding package will be in place and the project will be ready to proceed. The applicant is a branch of local government and has the ability to collect charges for debt and operation. The projected residential water rate is \$56.17 per month. This rate includes the debt service for this project and the O&M costs. The new rate will affect 61 households. This proposed water rate is 132% of the DOC target rate, which indicates the project is affordable for residents. Cost estimates were provided for the options considered for each of the project components and were used to help determine preferred alternatives. Cost estimates are reasonable and adequate.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term construction-related impacts will be controlled through permitting and proper construction practices.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 89

<b>Applicant Name</b>	Gallatin County Solid Waste District
<b>Project Name</b>	Logan Landfill Waste-to-Energy Feasibility Study

<b>Amount Requested</b>	<u>\$ 100,000</u>
<b>Total Project Cost</b>	\$ 100,000

<b>Amount Recommended</b>	\$ 100,000
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## Project Summary

### Project History

The Logan landfill has a significant inventory, more than 1.1 million tons, of waste in place and accepts 100,000 tons of waste per year. As solid waste decomposes, methane gas is generated. This methane gas has high energy value and can be harnessed for use as a domestic or commercial energy source. Remaining landfill life is estimated at 15 years and methane is generated for 10 years beyond that.

### Technical Approach

The applicant proposes to construct test wells, test the quantity and quality of fill gas, and prepare a feasibility study to harness natural gas from the Logan landfill site. The results from the feasibility study will then be applied to develop a project to collect waste-generated greenhouse gasses, which are currently venting directly into the atmosphere, and use them to produce energy.

The application lacked some technical data. Information regarding the depth and age of the garbage cells is unclear and the application did not explain the placement and technical specifications for the test wells. Without this information, the technical feasibility of the overall implementation plan is difficult to assess. It also is difficult to determine if the Logan landfill is a good candidate for a waste-to-energy project. The feasibility study will explore these concerns and discuss alternatives to project completion, including no action. The EPA Landfill Methane Outreach Program estimates that only four landfills in Montana can produce significant quantity and quality of gas for energy and the Logan landfill is not one of them. Supplemental justification for the Logan landfill as a suitable candidate is not included in the application. The study is scheduled to begin during summer 2011 with test well design and bidding, and will conclude with a final report in fall 2012.

Specific tasks to be accomplished:

- Prepare a management plan, establish project files, submit signature and depository forms, and submit budgetary resolution;
- Commence final well and project design, submit plans to DNRC, and prepare bid documents;
- Review contract requirements, place a public bid advertisement, open bids, examine proposals, request a contractor debarment review, select a contractor, conduct a pre-construction conference and issue a notice to proceed;
- Begin well construction, monitor the contract engineer and drilling contractor, conduct labor compliance reviews, hold construction progress meetings, and oversee a final inspection;
- Conduct gas testing and analysis, complete a draft report, present findings to the board Gallatin County Solid Waste District Board and the public for comment, and finalize the report and inspection; and
- Submit a final drawdown, conditional certificate and final certificate, determine audit requirements, and submit the project completion report.

### Resource and Citizen Benefits Analysis

The primary benefits of this project are the potential to develop an alternative energy source and to preserve air and groundwater resources. The project has the potential to convert waste to energy for the next 20 to 25 years. Energy will be conserved from other sources if development is successful. A waste-to-energy project will preserve the groundwater resource by reducing VOC contamination, which is documented in the Logan landfill groundwater monitoring system. The nature of a feasibility study makes benefits difficult to measure or quantify.

The project will have minimal impact on economic development. Landfill operators can generate revenue from the sale of harnessed gas, but application did not specify who would realize the financial benefit. Jobs will be created through the design, construction, and operation of energy recovery systems. One permanent job would be needed to maintain the gas system. Local agencies submitted letters of support for this project.

### Project Management

The application outlined an appropriate management team with relevant experience and detailed tasks. The applicant stated that the consulting engineer was selected in accordance with statutorily defined procurement procedures. Planning is sufficient to begin the feasibility study. The district will encourage public input through open board meetings.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$5,000	\$0	\$0	\$5,000
Professional & Technical	\$54,300	\$0	\$0	\$54,300
Construction	\$40,700	\$0	\$0	\$40,700
Total	\$100,000	\$0	\$0	\$100,000

The proposed project will be wholly funded by the DNRC RRGL grant. Contract administration will be provided by the Gallatin County staff. Construction costs are significant because there are few contractors who do this type of work and the work requires specialized equipment. The overall budget and funding package are reasonable. The project will not increase current or future disposal rates.



## Environmental Evaluation

The applicant adequately discussed potentially adverse environmental impacts and corresponding mitigation. Dust and noise generation were appropriately discussed and mitigation measures were outlined. Fire potential hazards would be increased with operation of an active gas collection system, but the district will implement appropriate mitigation measures.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 90

<b>Applicant Name</b>	Hill County Conservation District
<b>Project Name</b>	Milk River Basin Riparian and Hydrology Restoration

<b>Amount Requested</b>	\$ 54,245	
<b>Other Funding Sources</b>	\$ 12,000	Applicant
<b>Total Project Cost</b>	\$ 66,245	

<b>Amount Recommended</b>	\$ 54,245
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## Project Summary

### Project History

Russian olive trees were first introduced to the Milk River floodplain in the 1950s. Russian olives since have become a nuisance species because they crowd out native plants and reduce wildlife diversity, have a high seed production and seed longevity, are drought and salt tolerant, and are largely unaffected by either livestock grazing or beavers. Established stands can use up to 200 gallons of water per tree per day. The Milk River watershed often experiences shortcomings in water supplies. Removing Russian olive trees from the participating properties will reduce the seed source in the basin and potentially increase the available water in the channel.

### Technical Approach

The applicant initially considered eight alternative methods for removing Russian olives. The applicant completed a cost and benefit analysis for three of those. The applicant recommended a stump cut with herbicide application approach over the slightly less expensive basal bark treatment alternative because it is more effective on mature trees. The third alternative, girdling, was nearly twice as expensive as the other two alternatives.

Specific tasks to be accomplished:

- Develop a pre- and post-removal monitoring system;
- Issue a RFP for removal activities;
- Conduct public involvement; and
- Remove the identified trees.

## Resource and Citizen Benefits Analysis

This project will conserve groundwater by eliminating trees that would otherwise transpire a large amount of water each day. Conservation of the groundwater is implied to aid in the conservation of surface water because most of the trees are located adjacent to waterways. This project will provide for improved management of noxious weeds by encouraging native vegetation. This project will conserve irrigated

acres and fisheries by increasing the available surface water and promote recreation and wildlife habitat by encouraging vegetative diversity.

### **Project Management**

The proposed project management is adequate. The project will be coordinated and managed by the Hill County CD Board and Administrator.

### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$5,477	\$0	\$0	<b>\$5,477</b>
Professional & Technical	\$4,000	\$0	\$12,000	<b>\$16,000</b>
Construction	\$44,768	\$0	\$0	<b>\$44,768</b>
<b>Total</b>	<b>\$54,245</b>	<b>\$0</b>	<b>\$12,000</b>	<b>\$66,245</b>

The Hill County CD will provide matching funds. The in-kind services will include pre- and post-project monitoring of weed infestations, hydrology changes, and documentation of success rates.

### **Environmental Evaluation**

There are no adverse environmental impacts from this project. This project will potentially benefit groundwater resources and surface water quantity as well as wildlife habitat, grazing area and access to recreation. Removal of the Russian olive trees is expected to increase fish habitat in the Milk River through increased water, however there is potential for increased water temperatures due to removal of shade cover.

### **Funding Recommendation**

The DNRC recommends grant funding of \$54,245 upon development and approval of the final scope of work, administration, budget, and funding package.

### **Project No. 91**

<b>Applicant Name</b>	Brady County Water and Sewer District		
<b>Project Name</b>	Water System Improvements		
<b>Amount Requested</b>	\$	100,000	
<b>Other funding Sources</b>	\$	267,750	RD Grant
	\$	89,250	RD Loan
	\$	450,000	CDBG
	\$	750,000	TSEP
<b>Total Project Cost</b>		\$1,657,000	
<b>Amount Recommended</b>	\$	100,000	

### **Project Summary**

#### **Project History**

The Brady County WSD currently serves 81 residential customers, 15 commercial customers, and a total population of approximately 173. The district operates a package surface WTP that was constructed in 1993. Violations of disinfection by-products (DBP) and/or turbidity have occurred on a regular basis. The district must correct those problems and now also meet the EPA requirements for removal of the parasite, *Cryptosporidium*. The goal of the project is to replace equipment that is no longer functional and install additional treatment in order to meet current requirements.

## Technical Approach

The applicant's engineer prepared a PER and evaluated the entire water system and determined that the district should place a priority on WTP improvements. Eighteen treatment and/or source alternatives were considered. The preferred alternative(s) consists of upgrading existing equipment, installing membranes to remove DBPs, and adding ultra violet disinfection.

Benefits to natural resources include more efficient pumping equipment and improved treatment process control equipment. There are technical concerns about the application. Potentially feasible alternatives were essentially eliminated during alternative selection. The selected membranes do not perform well if the water has significant particulate content and particulate content has been a past problem in Brady. Replacement of equipment should have occurred under a regular maintenance program. Also, because there is a history of operation, maintenance and treatment difficulties with the system in Brady, more consideration should be given to connecting to Conrad.

Project milestones include obtaining funding by June 2011; completing engineering design and pilot testing in 2011; securing DEQ approval and bidding in 2012; and, completing construction in 2013.

Specific tasks to be accomplished:

- Replace plant controls, control valves and backwash pump and add alarms;
- Replace chemical feed equipment and turbidity monitors;
- Improve sludge removal;
- Install UV disinfection, a chlorine analyzer and a chlorine leak alarm; and
- Install nanofiltration membrane filtration and a new clearwell.

## **Resource and Citizen Benefits Analysis**

Installation of more efficient pumping equipment and the installation of new flow measuring equipment are also expected to improve management and preserve resources. These changes will directly benefit the public. Rehabilitation of the water supply is expected to promote economic development. The project proposal was developed in conjunction with completion of a CIP. Twenty-one letters of support were received.

## **Project Management**

The proposed project management plan and project schedule appear acceptable. A CIP and a PER have been completed. The project engineer has already been selected in accordance with required procurement procedures. Responsibilities for the district and for the engineer have been assigned. Two public meetings were held following the required advertisement periods. Project progress will be discussed at monthly board meetings with appropriate advance notices.

## **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$44,500	\$44,500
Professional & Technical	\$50,000	\$0	\$232,065	\$282,065
Construction	\$50,000	\$0	\$1,280,435	\$1,330,435
Total	\$100,000	\$0	\$1,557,000	\$1,657,000

Applications for project funding have been completed and submitted to the appropriate agencies. Most of the project funding would be CDBG and TSEP grant funding from the DOC, an RD grant from the USDA, and the requested RRGL grant. A USDA RD loan of \$89,250 is proposed. Existing water and sewer rates are \$50.00 and \$38.00 per month, respectively. After completion, the projected average residential water user fee will be \$73.45 per month. The combined rate will be \$111.45 which would be 193% of the 2000 combined target rate, \$57.88, for Teton County. Approximately 173 residents would benefit from



the project in addition to rural customers who haul water from Brady. If adequate funding is not received, only the most critical water treatment improvements could be implemented. Funding from the STAG and WRDA programs is unlikely.

### **Environmental Evaluation**

The proposed project will not result in adverse environmental impacts except for reasonably expected temporary construction impacts. A uniform environmental checklist was prepared, but comments from relevant agencies were not included.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### **Project No. 92**

<b>Applicant Name</b>	Lincoln Conservation District		
<b>Project Name</b>	Sinclair Creek Watershed Improvement		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$	25,000	USFWS
	\$	42,232	Other
<b>Total Project Cost</b>	\$	167,232	
<b>Amount Recommended</b>	\$	100,000	

### **Project Summary**

#### **Project History**

The Lincoln CD, along with partners, completed a restoration plan for Sinclair Creek in 2009. Sinclair Creek experienced a significant flood event in response to consecutive days of above average precipitation. The flood damaged infrastructure throughout the watershed, including a 225-foot section of the main Sinclair Creek road. The flood event also compromised the stream morphology and stability of Sinclair Creek. The event caused accelerated channel migration, bank erosion, down cutting, loss of floodplain connectivity, and impacts to water quality and aquatic habitat.

The Lincoln CD plans to design stabilization alternatives to mitigate impacts from the recent flood event, to protect Sinclair Creek during future flood events, to replace a bridge, and to protect the Sinclair Creek road.

#### **Technical Approach**

The overall project goal is to design stabilization alternatives to improve and preserve water quality in Sinclair Creek due to historic and future flood events. The project goals are also to replace a bridge and provide protection to the Sinclair Creek road.

The Lincoln CD proposes to restore Sinclair Creek to a stable, self-maintaining system by relocating and reconstructing the channel and floodplain away from the current road embankment, removing the abandoned City of Eureka water intake structure, and replacing the undersized bridge to accommodate channel and floodplain reconstruction. This alternative would eliminate the risk of future road failure. Renewable resource improvements which are planned to benefit from this alternative include addressing aquatic habitat impairment and water quality concerns.

The secondary reviewer did not feel that the project was primarily aimed at renewable resource improvements since the main goal of the project is to replace a bridge, remove an intake supply which the city abandoned 30 to 40 years ago, and ensure public safety by preserving and maintaining a county road. The secondary reviewer also noted that project monitoring is not adequately addressed in the application.

The applicant evaluated alternatives based on the needs for bridge, road stability, and public safety. The applicant also stated that if funding is not secured to implement the preferred alternative, the priorities of the project would be to (1) replace the bridge; (2) remove the intake; and (3) restore the creek.

Specific tasks to be accomplished:

- Relocate and reconstruct 750 feet of Sinclair Creek and floodplain;
- Remove the abandoned water supply intake structure and stabilize the channel;
- Stabilize Sinclair Creek Road embankment; and
- Replace one bridge to increase hydraulic capacity and reduce channel velocities.

### Resource and Citizen Benefits Analysis

This project would benefit water quality in Sinclair Creek through bank stabilization through proper design and implementation. The project would result in the preservation of Sinclair Creek water quality by stabilizing the stream bank and decreasing the sediment load to the system. Sinclair Creek is an important tributary to the Tobacco River in the Upper Kootenai River watershed. The preservation of water quality would also assist in managing habitat conditions for bull trout, a threatened species, and conserving 25% of base flow discharge which is currently lost to the abandoned intake structure.

In addition to the resource management benefits, the project is expected to improve public safety and improve emergency response efforts to local land owners by reducing the risk of future road failure and maintaining a bridge and road to 58 households. One individual and two agencies submitted letters in support of the project. Support was also expressed during a public meeting.

### Project Management

The proposed management plan is adequate. The Lincoln CD will hire a qualified engineering firm using a competitive selection process to provide engineering services, prepare the final design, bid documents, and specifications, and manage construction. The Lincoln CD initiated public involvement in 2008 as part of a planning effort for this project. Public meetings and public input have been included in the planning process.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$4,878	\$0	\$0	\$4,878
Professional & Technical	\$0	\$0	\$13,300	\$13,300
Construction	\$95,122	\$0	\$53,932	\$149,054
Total	\$100,000	\$0	\$67,232	\$167,232

The project budget appears complete for the scope of this project. The secondary reviewer noted that project monitoring is not included in the budget. The DNRC grant funds will be used for administrative support and materials, which includes the bridge. Matching funds will be used for professional and technical services and construction management and labor.

## Environmental Evaluation

The short-term impacts to soils, vegetation, water quality and fish habitat that occur during construction will be mitigated through the use of best management practices. Following construction, all disturbed areas within the project area will be mulched, seeded, and treated with erosion control measures to minimize the risk of sediment introduction into the creek. The project will have minimal impact to the surrounding environment.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 93

<b>Applicant Name</b>	Tin Cup County Water and Sewer District
<b>Project Name</b>	Tin Cup Lake Dam Improvements
<b>Amount Requested</b>	\$ 94,638
<b>Total Project Cost</b>	\$ 94,638
<b>Amount Recommended</b>	\$ 94,638

## Project Summary

### Project History

Tin Cup Lake Dam is an earthen wilderness dam located about 12 miles southwest of Darby in Ravalli County. The dam provides for late season irrigation water to 135 irrigators on 1,600 acres. Due to safety concerns, the dam was partially breached in 1998. This resulted in a decrease in usable reservoir storage capacity from approximately 2,000 acre-feet to 911 acre-feet.

The Tin Cup County WSD owns and maintains the dam. Since 2000, the district has been in the process of obtaining funding and making improvements to the dam to bring it into compliance with dam safety requirements, thus enabling Tin Cup Lake to fill to its maximum capacity each spring.

This is the final phase of a three-phase project. In 2009, the district installed a satellite communications system. The district uses that system to monitor reservoir pool levels and remotely control the outlet gate. During summer 2010, Phase 2 will be completed. This phase consists of reshaping, lining, and riprapping the upstream face of the dam to alleviate seepage and surface erosion. Additionally, a concrete outlet structure will be constructed. Phase 3, the final phase and the focus of this grant application, will consist of the removing and disposing log debris around the lake and the installing a new debris barrier, or log boom. The purpose of the barrier is to prevent debris from accumulating on the dam face and in the spillway channel. Accumulated debris might otherwise cause overtopping and possible dam failure during a high-runoff weather event.

### Technical Approach

The district has contracted with an engineering firm for the design of improvements to Tin Cup Lake Dam. Design of the project is complete and phase 1 was completed in 2009. Phase 2, the major phase of construction, will be constructed during summer 2010. The final phase consists of debris removal and the installation of a log boom to prevent debris from collecting at the dam and spillway.



Specific tasks to be accomplished:

- Procure the components for a manufactured log boom;
- Mobilize a camp and ten-person crew in summer 2011 to collect and begin disposing of debris and install the log boom; and
- Complete the disposal of debris in fall 2012.

### Resource and Citizen Benefits Analysis

Resource benefits associated with this project include the development of late season instream flows in Tin Cup Creek, the development of approximately 1,100 acre-feet of additional water storage, and the preservation of a wilderness dam that facilitates the storage of water used late each summer to irrigate 1,600 acres in the Bitterroot Valley.

The purpose of the project is to bring Tin Cup Lake Dam into compliance with dam safety requirements, thus allowing for the lake to fill to capacity and provide late-season irrigation water to 135 landowners in the Bitterroot Valley. In addition, the project will facilitate the storage of 400 acre-feet of water to be leased to the Montana Water Trust. The water will be used exclusively to maintain instream flow in Tin Cup Creek, a trout fishery.

Tin Cup Lake Dam is one of many dams that were constructed during the early 1900s in what is now the Bitterroot-Selway Wilderness Area. The dams were constructed at the outlets of natural mountain lakes to increase storage capacity during spring runoff, thus providing irrigation water to farms and ranches in the valley below. Nearly all of these impoundments have been classified "high hazard" according to current dam safety laws. This is only one of several on-going projects to bring these wilderness dams into compliance with current dam safety standards. Compliance will benefit acreage that has been irrigated for nearly 100 years.

### Project Management

Management of this project will be the responsibility of the district in cooperation with its engineer, the USFS, and the public. An engineer has been employed by the district for the past several years for the design and construction management of the first two of the three-phase project. USFS prepared an EA for this project in 2009. As required by the NEPA, the EA process involved the public. Phases 1 and 2 will be complete in 2010. This final phase is scheduled to begin in fall 2011, with completion in fall 2012.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$0	\$0
Professional & Technical	\$0	\$0	\$0	\$0
Construction	\$94,638	\$0	\$0	\$94,638
Total	\$94,638	\$0	\$0	\$94,638

The proposed budget is only for work to be accomplished during phase 3 and will be funded exclusively by the requested RRGL grant. Phases 1 and 2 were funded with district reserves and in-kind labor, a \$100,000 Future Fisheries Grant through the FWP, and a \$300,000 lease to the Montana Water Trust for reserved instream storage. Phase 3 consists of collecting and disposing of logs and debris from around the lakeshore and dam areas. The total cost is estimated at \$94,638, including an \$8,050 contingency. There will be no administrative or engineering costs associated with this final phase of the project.

### Environmental Evaluation

The adverse impacts associated with this project are temporary and will be avoided to the greatest possible extent. According to the EA, helicopter flights must be limited to minimize impacts to wildlife, including peregrine falcons that inhabit the area. The proposed method of debris disposal is burning.

This activity will take place during late fall and will have a temporary detrimental effect on air quality. Environmental benefits include improved public safety, the ability of the district to maintain instream flows in Tin Cup Creek, and increased availability of late-season water to irrigators in the upper Bitterroot Valley.

### **Funding Recommendation**

The DNRC recommends grant funding of \$94,638 upon development and approval of the final scope of work, administration, budget, and funding package.

### **Project No. 94**

<b>Applicant Name</b>	Melrose Water and Sewer District
<b>Project Name</b>	Wastewater System Improvements

<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 162,000 TSEP
	\$ 15,000 Applicant
	\$ 15,000 TSEP Planning Grant
	\$ 10,000 DNRC Planning Grant
	<u>\$ 56,817</u> SRF
<b>Total Project Cost</b>	\$ 358,817

<b>Amount Recommended</b>	\$ 100,000
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### **Project Summary**

#### **Project History**

In 1991, a wastewater collection, treatment, and disposal system was constructed for the community of Melrose in response to groundwater contamination issues. This system consists of approximately 6,850 feet of eight-inch PVC gravity mains and manholes that flow wastewater into a lift station. The lift station pumps the influent through approximately 5,500 feet of four-inch PVC forcemain to a facultative lagoon treatment system. The system has been designed to discharge from the facultative lagoons to an irrigation pivot for final disposal. But, due to such low flows, the system acts as a full retention pond. The pivot has not been used for wastewater discharge in years. Challenges facing the utility include repeated failures of the pump station and deterioration of the concrete structures that control flow into and between the lagoon cells. The inlet structure is of particular concern because it is seeping into the ground, with a potential for contaminating groundwater supplies.

#### **Technical Approach**

The preferred alternative involves replacement of the pumping system within the pump station and the inlet structure at the wastewater lagoons. The alternatives were thoroughly evaluated, cost estimates were complete, and the project is technically feasible. The applicant should have evaluated alternatives for the inlet structure to the wastewater lagoons. The existing infrastructure and the current design should work acceptably, provided that the concrete is placed to design standards and specification.

Specific tasks to be accomplished:

- Replace existing lift station pumping system with two grinder pumps, new gate valves, new check valves, new air relief valves, and new controls; and
- Replace the lagoon inlet and interpond structures.

## Resource and Citizen Benefits Analysis

The proposed project potentially will preserve groundwater and surface water qualities and conserve energy. It is not possible to quantify the beneficial impacts the improvements would make. Further, the conservation benefits only apply if the lift station fails, and that results in overflowing of the lift station. The lift station has failed twice in the past, with varying degrees of severity. An overflow would result in contamination of surface water, but the proximity to the Big Hole River makes it possible.

## Project Management

The project implementation plan and project management process appears acceptable for the project proposed.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$34,040	\$34,040
Professional & Technical	\$0	\$0	\$100,777	\$110,777
Construction	\$100,000	\$0	\$114,000	\$214,000
Total	\$100,000	\$0	\$248,817	\$358,817

Financially, the proposed budget appears consistent with the proposed project scope. The project is anticipated to increase sewage rates to users from \$25 to \$28.11. The target rate for the area is \$21.56 for wastewater. As a result, the projected wastewater rates will be 130% of the target rate.

## Environmental Evaluation

The environmental evaluation appears adequate because all appropriate agencies were contacted and indicated the project is not anticipated to have significant long-term negative impacts on the environment.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## Project No. 95

**Applicant Name** Augusta Water and Sewer District  
**Project Name** Wastewater System Improvements

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 295,000 TSEP  
\$ 195,000 SRF  
**Total Project Cost** \$ 590,000

**Amount Recommended** \$ 100,000

## Project Summary

### Project History

The Augusta WSD serves a population of 300 people in 142 households. The town completed major upgrades to its sewage collection system and treatment facility in 2002 and 2003. The upgrades included a new total retention facility, 7,000 lineal feet of new collection line, and replacement of 10,000 lineal feet of deteriorated pipe. The previous project fixed approximately 75% of the collection system. A recent inspection of the remaining 25% of collection system revealed many structural and alignment



deficiencies. The deficiencies have resulted in documented backups into residential homes and are likely resulting in the release of raw wastewater into the groundwater aquifer.

#### Technical Approach

The applicant intends to replace 3,000 lineal feet of deteriorated sewer piping, install 600 lineal feet of new sewer, install 12 new manholes, and re-connect 50 sewer services lines. The PER did not screen alternatives and the few alternatives considered were given a full evaluation. The PER evaluated no action, open cut replacement, pipe bursting, and cured-in-place pipe lining. The PER included a reasonably thorough analysis of the capital requirements, the costs for O&M, salvage, and net present worth. They estimated that the O&M costs for no action were the same as for action alternatives. This assessment is somewhat questionable.

Specific tasks to be accomplished:

- Replace 3,000 lineal feet of deteriorated sewer;
- Install 600 lineal feet of new sewer;
- Install 12 new manholes;
- 50 service re-connections; and
- Replace 700 square yards of asphalt.

#### **Resource and Citizen Benefits Analysis**

The primary natural resource benefit will be the preservation of the groundwater aquifer quality through elimination of leaky sewer mains and raw sewage contribution to groundwater. The project also will reduce the risk of public exposure to raw sewage through backups.

#### **Project Management**

The project management plan is thorough and well-structured. There is a reasonable system of check and balances to control the flow of funds to and from the applicant and to its consultants. Staff requirements/responsibilities, procurement requirements, coordination, public involvement and consultant management are all reasonably addressed.

#### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$28,000	\$28,000
Professional & Technical	\$0	\$0	\$97,000	\$97,000
Construction	\$100,000	\$0	\$365,000	\$465,000
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$490,000</b>	<b>\$590,000</b>

If the RRGL request is not approved, the project will still likely be feasible with RD loan of \$295,000. This would result in rates equating to 124% of the target rate. Under the proposed funding scenario, the expected user rate of \$21.21 will be 115% of the target rate.

## Environmental Evaluation

The overall long-term environmental impacts are expected to be positive. The project will reduce the discharge of raw wastewater from the broken sewer mains into the groundwater. Some short-term, construction-related impacts can be expected. Impacts will be minimized and mitigated to the greatest extent possible.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 96

<b>Applicant Name</b>	Target Range Sewer and Water District
<b>Project Name</b>	Replacing Obsolete Septic Systems

<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 89,610 Applicant
<b>Total Project Cost</b>	\$ 189,610

<b>Amount Recommended</b>	\$ 100,000
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## Project Summary

### Project History

The Target Range Sewer and Water District was formed in 2000 by a group of neighbors who were interested in protecting the water resources in the area west of Missoula. Homeowners within the district use on-site systems to treat and dispose of their domestic wastewater. Many of these on-site systems use cesspools or similar obsolete facilities to treat the wastewater. Potential contamination to the Missoula aquifer, due to the shallow depth of the water table in the area, is a major concern for the district. The district has no infrastructure and, when originally formed, was never intended to promote the installation of a community sewer or water system. Instead, the district intended to promote water resource protection through an educational approach. Since its original formation, the district has expanded twice to its current size of 1,851 acres, with an estimated population of approximately 3,000 people. The last expansion occurred in 2008 and was done with the intent of taking a more proactive approach toward protection of the local water resource.

### Technical Approach

The district proposes to replace approximately 26 obsolete systems, especially those relying upon a cesspool for wastewater treatment and disposal, with a standard septic tank and drainfield system. Costs for replacement would be shared with the district and the homeowners. The district would contribute from 35% to 85% of the cost, based on the homeowner's income.

The district evaluated a variety of alternatives to provide greater protection of the area groundwater resources. These included an expanded public education program; creation of a county ordinance requiring any outdated on-site wastewater treatment and disposal system to be improved whenever a property was sold; and, connection to the City of Missoula wastewater treatment facility. The district determined that all alternatives, except the proposed system replacement program, would be either ineffective or unfeasible. Connection to the Missoula wastewater treatment facility was rejected because the city did not think it would be financially attainable within the next 10 to 15 years.

Other alternatives, which might be financially feasible and that would probably result in greater protection of the groundwater resources, include the use of more advanced on-site wastewater treatment and

disposal systems or a smaller scale community wastewater collection and treatment facilities. Those alternatives were not considered.

Specific tasks to be accomplished:

- Identify potential systems that require replacement;
- Determine the district financial contribution to system replacement based on the homeowner's income;
- Design a site specific septic tank–drainfield system;
- Obtain the necessary permit for the system from Missoula County;
- Construct the permitted system; and
- Remove and remediate the existing obsolete system.

### **Resource and Citizen Benefits Analysis**

Replacement of obsolete on-site wastewater systems with a standard septic tank and drainfield system would provide better wastewater treatment and more effective disposal. The impact of replacing 26 systems out of several thousand systems on the area water resources is difficult to quantify. The local homeowner's association, Missoula County Board of Commissioners, and a Montana state senator submitted letters of support.

### **Project Management**

The proposed project management appears reasonable, complete, and easily implementable.

### **Financial Assessment**

<b>Budget Item</b>	<b>RRGL Grant</b>	<b>RRGL Loan</b>	<b>Match</b>	<b>Total</b>
<b>Administration</b>	\$4,500	\$0	\$510	<b>\$5,010</b>
<b>Professional &amp; Technical</b>	\$7,800	\$0	\$5,200	<b>\$13,000</b>
<b>Construction</b>	\$87,700	\$0	\$83,900	<b>\$171,600</b>
<b>Total</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$138,350</b>	<b>\$189,610</b>

All costs appear to be project costs. Funding of the replacement system would be a joint effort between the district and the homeowner with the district's contribution ranging from 35% to 85% based upon the homeowner's income. Matching funds for management and professional and technical tasks are in the form of in-kind services and, presumably, are secure. Matching funds for construction tasks will be in the form of homeowner contribution. No increase in the existing assessment of \$2.00 per month is anticipated. In total 1,161 residences are presently served by the sewer and water district. There is no plan to expand the district as part of this project.

In addition, the City of Missoula agreed to provide all accounting functions relating to this project and a local financial management firm has agreed to gather and verify the personal and financial information needed to determine the income of the effected homeowners.

### **Environmental Evaluation**

Short-term construction impacts will be limited to small areas and will be relatively brief in duration. Long-term environmental impacts are positive in terms of water resource preservation.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development of a PER that would fully evaluate other alternatives for improving wastewater treatment for the district and upon approval of the final scope of work, administration, budget and funding package.



## **Project No. 97**

<b>Applicant Name</b>	Carbon Conservation District
<b>Project Name</b>	Pleasant Valley Canal Rehabilitation

<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	<u>\$ 196,372</u> Applicant
<b>Total Project Cost</b>	\$ 296,372

<b>Amount Recommended</b>	\$ 100,000
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### **Project Summary**

#### **Project History**

The PVEC infrastructure, located near Red Lodge, diverts water from Rock Creek to serve approximately 2,000 acres. PVEC evaluated the system infrastructure in 2007 to locate areas of concern and to help develop a strategy for rehabilitating the system. The investigation revealed that an 880-foot siphon was in poor condition, structurally unstable, and leaked significantly. An estimated 10% of the water diverted from Rock Creek is lost to leakage from this siphon. Rehabilitation would conserve water, allowing for a reduced diversion out of Rock Creek.

#### **Technical Approach**

The applicant proposes to replace the existing siphon with a new smaller diameter RCP siphon to eliminate water losses in the structure. The existing inlet and outlet structures will be kept in place and the siphon will be replaced along the same alignment, thereby reducing costs associated with the rehabilitation. Replacement of the siphon will improve both water delivery and water conservation within the PVEC. Additionally, the reduction in water demand will result in a reduction of water diverted from Rock Creek, improving instream flows for fisheries and recreation.

The applicant also considered replacement of the existing siphon with a 48-inch HDPE culvert set on grade, effectively eliminating the siphon. This alternative was not selected due to higher costs associated with extending the culvert and replacing the outlet structure, but the application did not include information to support that conclusion. The evaluation of the alternatives did not definitively support the selection of the preferred alternative. The application indicated that any cost overages would be absorbed by the applicant. The estimates included a 10% contingency to protect against price increases but the actual costs may exceed the estimates, including the contingency.

Specific tasks to be accomplished:

- Grant administration and project set-up;
- Final design and development of construction plans;
- Removal and disposal of existing siphon;
- Installation of new siphon;
- Site reclamation and rehabilitation; and
- Project closeout.

### **Resource and Citizen Benefits Analysis**

Replacement of the existing siphon with a new efficient structure will promote the efficient and beneficial use of water resources through increased delivery efficiency and conservation. The elimination of leakage losses from the structure will reduce diversion and, thereby, conserve water in Rock Creek. Water left in Rock Creek will benefit both recreation and the local fishery.

The local community, businesses, CD's, and irrigators expressed support for this project.

## Project Management

The CD will administer the grant administration throughout the project. The Carbon CD will work with the Beartooth RC&D program who will manage on the ground activities and coordinate between the CD and PVCI. The CD will hire an engineer to complete a final rehabilitation design, plan set, and construction documentation. The engineer will also provide construction inspection and administration throughout completion of the project. The CD will hire a construction contractor, following established state procurement procedures. The project management plan did not clearly specify the roles of all parties nor did it specify coordination roles during the project.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$5,004	\$0	\$1,348	\$6,352
Professional & Technical	\$17,000	\$0	\$0	\$17,000
Construction	\$77,996	\$0	\$195,024	\$273,020
Total	\$100,000	\$0	\$196,372	\$296,372

The applicant requested \$100,000 in grant funding and indicated that the remaining \$174,800 would be funded through a low interest loan. The source of the loan is not identified. The estimated engineering fees appeared to be far lower than what would be expected for work of this nature. These costs should be reviewed in detail before contracting with the applicant to ensure that all services indicated in the application are actually included in the cost estimate. The project will serve 18 irrigators and 2,000 acres. The proposed project is projected to increase the annual assessment per water share from \$1.00 to \$1.50.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term environmental impacts may include, noise, dust, and vegetative disturbance during construction and can be mitigated by using best management practices.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 98

Applicant Name	Troy, City of
Project Name	Water System Improvements, Phase 3
Amount Requested	\$ 100,000
Other Funding Sources	\$ 500,000 WRDA
	\$ 25,000 Intercap Loan
Total Project Cost	\$ 625,000
Amount Recommended	\$ 100,000

## Project Summary

### Project History

The City of Troy water system was reconstructed in the 1950s. Since then, the water system has deteriorated and it now leaks excessively. Projects in 2008 and 2010 replaced more than 15,000 feet of

water main, approximately 60% of the distribution system, to address this issue. That work reduced leakage, but water loss remains high, estimated at 65% of the water pumped. This analysis was based on data obtain in 2009 and 2010, prior to the 2010 project. This project is the next step toward realizing the goal of reducing leakage to a reasonable level within the Troy water distribution system.

#### Technical Approach

The City of Troy proposes phase 3 of a five phase project to replace the entire water distribution system. The sections of water main included in this project are thought to have the most urgent leakage problems within the remaining 10,000 lineal feet of the old water mains. The project includes the replacement of ten and one-half blocks of water main on First, Second, Fourth, and Sixth Streets and Grant avenues in the City of Troy. The project is expected to be designed in winter 2012 with construction in fall 2012.

Specific tasks to be accomplished:

- Replace 3,300 lineal feet of existing water main using eight-inch diameter PVC pipe;
- Replace and/or install 22 eight-inch gate valves.
- Reconnect 50 water services; and
- Restore surfacing disturbed by pipe installation.

#### **Resource and Citizen Benefits Analysis**

The Troy water distribution system leaks excessively. Only about one-third of the water pumped reaches its intended customers. An accurate estimate of leakage has been obtained by comparing the water meters measuring the water supply wells with the individual residential and commercial meters.

#### **Project Management**

The City of Troy has successfully completed five significant water and sewer projects during the last 12 years and has experience managing major infrastructure projects. The management plan is adequate and project schedule is realistic. The project can easily be implemented within the next two years. The project engineer and the contractor will be contracted following established procurement procedures.

#### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$8,000	\$0	\$12,000	\$20,000
Professional & Technical	\$0	\$0	\$72,650	\$72,650
Construction	\$92,000	\$0	\$440,350	\$532,350
Total	\$100,000	\$0	\$525,000	\$625,000

The majority of funding on this project is dependent on the WRDA grant. Only a few of these grants is awarded in any year and Troy could be unsuccessful. If the WRDA application is unsuccessful, the city has the option to either wait a year and resubmit the application or apply for an RD grant or loan. No increase in user rates is planned.



## Environmental Evaluation

The long-term environmental impacts of this project are beneficial. The project will reduce leakage, reduce the amount of water pumped, reduce impacts to the groundwater aquifer, conserve energy, and increase the ability of the city to accommodate growth and encourage development. A more reliable water system will benefit schools, businesses, industrial facilities, and health care facilities. The improved system will increase fire flows, augmenting fire protection of the community. The project will have the normal short-term environmental impacts associated with most construction projects, including dust and noise.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 99

<b>Applicant Name</b>	Montana Department of Natural Resources and Conservation Water Resources Division
<b>Project Name</b>	Water Resource Survey Framework
<b>Amount Requested</b>	\$ 71,000
<b>Total Project Cost</b>	\$ 71,000
<b>Amount Recommended</b>	\$ 71,000

## Project Summary

### Project History

This project seeks to investigate, evaluate and analyze the framework and prototype dimensions for a geospatial database to integrate existing and future water resource data into a centralized system. It will lay the groundwork for potentially creating a new watershed based water resource survey for the 4<sup>th</sup> Code HUC watersheds in Montana. The 4<sup>th</sup> Code HUC roughly corresponds to the sub-basin level, or a map scale of about 1:500,000, and is the scale currently in use for local planning.

### Technical Approach

DNRC proposes to develop the framework and prototype dimensions for a geospatial database to integrate existing and future water resource data and compile, review and recommend alternatives for mapping irrigated acres and quantifying irrigation water use across the state. DNRC considered no action in addition to the proposal to develop a framework for water resource information.

No action would result in continued water planning and management, based on the original data from the "Montana Water Resource Survey" completed from 1943 through 1971. The preferred alternative could improve the management of water resource data.

Concerns with the proposed project include the fact that all feasible alternatives have not been adequately evaluated. The proposed time schedule is overly ambitious. The application lacked adequate detail, and the proposal is basically a plan to develop a plan. The project is scheduled to be completed during FY 2011 and FY 2012, but that time frame seems very tight for the scope of the project.

Specific tasks to be accomplished:

- Determine GIS components needed;
- Develop a conceptual design document;
- Develop a draft geospatial database schema;
- Develop a prototype framework database, application and workflow;
- Test prototype;
- Integrate water resource information; and
- Develop a protocol for storing, updating and managing data.

### Resource and Citizen Benefits Analysis

The benefits associated with this project include the improved ability to quantify water use and quantify actual irrigated acreage which, in turn, would lead to better groundwater and surface water management. Because this project is a preliminary evaluation of a study, benefits of the project are not measurable. The database developed for this project could be used in a variety of ways and would be accessible by other agencies, water users and the public. Two parties, one of whom is involved with the project, submitted letters of support.

### Project Management

The DNRC Water Management Bureau will manage the project, but the application did not clarify responsibilities, nor did it explain how the project would be managed. The project is ready to proceed, but adequate pre-planning has not been completed. Time for additional planning time is included in the schedule. The time allotted for completion of the project seems inadequate for the tasks proposed. Public involvement in the project will be accomplished by encouraging the formation of partnerships and alliances, but that is not adequately defined. The project will follow established state procurement protocols.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$6,000	\$0	\$0	\$6,000
Professional & Technical	\$65,000	\$0	\$0	\$65,000
Construction	\$0	\$0	\$0	\$0
Total	\$71,000	\$0	\$0	\$71,000

The majority of the funding for this project would be used to hire a professional GIS contractor. The budget appeared inadequate to achieve all of the stated project tasks. DNRC has no ability to assess fees for this project and the number of users of the final product is undefined. There are no matching funds and no backup plan was discussed in the case that grant is not awarded.

### Environmental Evaluation

Full completion of a water resource framework will have a positive effect on the environment, although this project will have no net effect. Benefits would result from improved management of surface and groundwater resources.

### Funding Recommendation

The DNRC recommends grant funding of \$71,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## Project No. 100

<b>Applicant Name</b>	University of Montana		
<b>Project Name</b>	Developing Wolf Population Monitoring Techniques to Advance Management and Conservation of Wildlife in Montana		
<b>Amount Requested</b>	\$ 100,000		
<b>Other Funding Sources</b>	\$ 25,000	Bosack-Kruger Foundation	
	\$ 75,000	Frankenberg Foundation	
	\$ 20,000	Bernice Barbour Foundation	
<b>Total Project Cost</b>	\$ 220,000		
<b>Amount Recommended</b>	\$ 100,000		

### **Project Summary**

#### Project History

The ESA delisting criteria requires Montana to monitor wolf populations and annually document the number of breeding pairs in order to maintain the delisted status for wolves in the state. Traditional wolf population monitoring methods have used capture, radio-collaring, and aerial survey. This approach costs \$750,000 per year and the federal government no longer provides funding to Montana for this work. UM proposes to research the use of the POM that relies on FWP hunter survey wolf sighting information, combined with a more limited data set of fine scale survey methods, to provide the necessary information for less cost.

#### Technical Approach

The preferred alternative is to use a POM model to monitor wolf populations. UM considered no action and traditional survey methods as alternatives to the proposed project. No action is an unrealistic alternative for FWP because it would not comply with the delisting criteria. The proposal, if successful, will provide the required wolf information at a cost of about \$160,000 per year, compared to the \$750,000 cost for radio-telemetry and aerial surveys. The project is expected to begin in early 2011 and be completed in late 2011.

Specific tasks to be accomplished:

- Identify specific area in Montana where field survey data will best complement the hunter survey information;
- Refine the statistical methodology for incorporating the field survey data in to a POM framework;
- Develop field sampling protocols for conducting rendezvous site surveys, hair/scat sampling, and other field sampling methods based on similar work in Idaho;
- Implement the field sampling studies on the areas identified;
- Analyze genetic information collected during field surveys; and
- Write project reports for FWP and submit manuscripts to peer reviewed scientific publications.

### **Resource and Citizen Benefits**

The research project could provide data that would assist FWP in managing wolf populations in Montana. If successful, the project also would reduce costs for wolf management. The data could be important in maintaining the delisted status of the gray wolf in Montana and maintaining state authority for wolf management. Both maintaining a delisted status and state authority are in the interest of Montana and its' citizens.

The research also could provide information that would assist in the restoration of gray wolves in Montana. The research would be part of the larger restoration efforts in Montana, Idaho, and Wyoming



and would be coordinated with on-going work with Idaho and Wyoming. FWP submitted a letter of support for this project.

### **Project Management**

The leader of the Montana Cooperative Wildlife Unit will provide oversight of this project. He is an employee of the USGS and the oversight would be part of his regular responsibilities. The applicant stated that the project would not include public involvement. The cooperative wildlife unit would hire six technicians for temporary field work. The application did not describe how the hiring process would comply with state procurement process.

### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$0	\$0
Professional & Technical	\$100,000	\$0	\$120,000	\$220,000
Construction	\$0	\$0	\$0	\$0
Total	\$100,000	\$0	\$120,000	\$220,000

The funding strategy includes RRGL and three other foundations. Funding commitments have not yet been received from those foundations. RRGL would fund the salaries of two temporary researchers in the cooperative wildlife unit and six technicians. The proposal included 15% university administrative overhead which is not eligible for RRGL funding.

### **Environmental Evaluation**

The research project would not adversely affect the environment.

### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### **Project No.101**

**Applicant Name** Lockwood Area/Yellowstone County Water and Sewer District  
**Project Name** Lockwood Water Treatment Plant Clearwell Addition

**Amount Requested** \$ 100,000  
**Other Funding Sources** \$ 800,000 SRF  
**Total Project Cost** \$ 900,000

**Amount Recommended** \$ 100,000

### **Project Summary**

#### **Project History**

The Lockwood water system was constructed in 1955. Initially, the system included several wells, well pumps, and the water lines that connected the original customers to the system. In 1987, a new WTP was constructed to treat raw water obtained from the Yellowstone River. The existing WTP has a 250,000-gallon clearwell to temporarily store treated water and allow contact time for chlorine disinfection. The existing clearwell must be kept full to assure adequate contact time and, thus, lacks any storage capacity. This project will construct an additional 250,000-gallon clearwell to allow additional storage and chlorine contact time. Construction of a second clearwell will allow the existing clearwell to be temporarily removed from service and upgraded by adding baffles.

## Technical Approach

The PER was derived from studies conducted in a 2006 Water System Master Plan Study. The master plan identified the need for a second 250,000-gallon clearwell and additional baffling in the existing clear well to increase the finished water storage and increase chlorine contact time. The second clearwell is part of expansions required for the water system to meet the needs of a developing community for the next 30 years.

The PER evaluated clearwell location, piping alternatives, life cycle costs, and other operational and aesthetic factors. The PER evaluated two locations and piping configurations and also evaluated three reservoir types, including steel, pre-stressed/post-tensioned concrete, and cast-in-place concrete. A steel clearwell would be the lowest cost alternative. A pre-stressed/post-tensioned concrete clearwell would have favorable operational and aesthetic values. All alternatives will be designed and bid as alternatives to be considered for construction.

Specific tasks to be accomplished:

- Complete engineering design and construction engineering for the proposed project;
- Construct 250,000-gallon clearwell and associated piping; and
- Add baffling to existing 250,000-gallon clearwell.

## **Resource and Citizen Benefits Analysis**

The second clearwell will provide additional storage to allow the WTP to operate at a more consistent rate and provide increased chlorine contact time necessary to protect public health and safety. The second clearwell also will allow the Lockwood water system to expand to serve the needs of the developing community.

## **Project Management**

The proposed project management plan is adequate. The Lockwood WSD will be able to manage the project with existing staff. The district will procure a project engineer, in accordance with state procurement standards, who will perform the design, supervise bidding and contractor procurement, and supervise construction. The district will procure construction services in accordance with state procurement standards. The district manager and grant coordinator will manage the project finances and grant requirements. The project can easily be designed and ready for construction either in 2011 or 2012, depending upon the time necessary to complete the other requested funding cycles. Construction can be completed in one year.

## **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$34,000	\$34,000
Professional & Technical	\$0	\$0	\$96,000	\$96,000
Construction	\$100,000	\$0	\$670,000	\$770,000
Total	\$100,000	\$0	\$800,000	\$900,000

The district will match the RRGL grant with an \$800,000 SRF loan. If the RRGL grant funding is not awarded, the district will either adjust the project scope or initiate other funding options. If the SRF loan is not obtained, the project will be delayed until additional funding from either reserves or rate collection is available. The project will result in an estimated increase in residential monthly water-only user rate from \$33.59 to \$36.46. The rate increase will affect 1,558 residential users. Rate increases for non-residential users will increase proportionally. This small increase in rates should be affordable to system users.

## Environmental Evaluation

The project will not cause significant environmental effects.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 102

<b>Applicant Name</b>	Eureka, Town of
<b>Project Name</b>	Wastewater System Upgrade and Expansion

<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 625,000 TSEP
	\$ 450,000 CDBG
	\$ 321,000 RD Grant
	<u>\$1,094,000</u> RD Loan
<b>Total Project Cost</b>	\$2,590,000

<b>Amount Recommended</b>	\$ 100,000
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## Project Summary

### Project History

Midvale is an unincorporated area immediately north of and contiguous with Eureka. Midvale has a population of just under 500 people. Wastewater collection and treatment in this area is presently accomplished by on-site septic tank/drainfield systems. Groundwater samples in the area have demonstrated elevated nitrate levels compared to other areas of the aquifer. Failures of the existing on-site systems also have become more frequent. Concerns about degraded groundwater quality and bacteriological contamination of area water supplies, together with a need to plan for more orderly growth and to stimulate economic development of the area have led to a study effort to install a community wastewater collection and treatment system.

### Technical Approach

The preferred alternative involves installation of a collection system that will tie into the Eureka collection system and be treated at the Eureka wastewater treatment facility. The Eureka facility consists of an aerated lagoon, followed by a storage pond, and discharge to the Tobacco River. A concern exists about capacity in the existing lagoon system and the likelihood of wastewater treatment improvements due to anticipated nutrient standards in the near future. The PER was completed in 2007. Since then, the DEQ has released regional anticipated ranges for wadeable streams across Montana that suggest the current treatment process will require significant improvements to even come close to the upper end of the anticipated range. Thus, there are concerns about the capacity of the existing lagoon system and the likelihood that it might not meet the anticipated nutrient standards after the wastewater treatment improvements have been completed.

An update to the report acknowledged that nutrient standards could present a challenge in the future and included information from DEQ staff regarding TMDL in the area. It was concluded, based on this information, that not enough information was available to assess treatment impacts. Project implementation of a wastewater treatment improvement could be as much as five or more years in the future. Despite the concerns, the proposed wastewater treatment project and the concept of connecting to Eureka is likely the most appropriate alternative available for the region to protect public health and environmental resources.



Specific tasks to be accomplished:

- Installation of approximately 20,500 feet of eight-inch PVC sanitary sewer;
- Installation of 165 service connections and leads;
- Installation of 3,000 feet of two-inch HDPE pressure lines and seven grinder pumps to address low-lying connections;
- Replacement of approximately 1,000 feet of eight-inch sewer pipeline within the Eureka collection system; and
- Minor headworks improvements at the Eureka wastewater treatment facility

### Resource and Citizen Benefits Analysis

The proposed project preserves groundwater supplies in the area by protecting them from bacterial and nutrient contamination, both of which carry adverse public health effects. The applicant suggests the community is aware of the need to protect public health and safety and is actively developing a capital planning process to help fund wastewater treatment improvements.

### Project Management

In general, the project implementation plan and project management process appear acceptable for the project proposed. From a management perspective, technical issues associated with nutrient standards, permitting, and potential treatment facility sizing could be the only issues that might result in project delays.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$130,000	\$130,000
Professional & Technical	\$0	\$0	\$305,000	\$305,000
Construction	\$100,000	\$0	\$2,055,000	\$2,055,000
Total	\$100,000	\$0	\$2,490,000	\$2,590,000

Financially, the proposed budget appears consistent with the proposed project scope. The proposed costs were not projected forward to the construction year. A present worth analysis was not necessary for comparison purposes because only the preferred alternative costs were updated. Although the original cost estimates were completed in 2007 and it is now 2010, the selected alternative is still likely the most appropriate. Current sewer rates are \$42.48 per month. With the addition of the project, sewer rates have been projected at \$33.75 per month. The economy of scale associated with bringing more users in to share the costs of debt and O&M will result in financial relief for the community. Despite this, the combined water and sewer rate for Eureka is \$51.98. With a water rate for Eureka (and Midvale) of \$33.10, the combined rate is 129% of the target rate.

### Environmental Evaluation

The environmental evaluation appears adequate because all appropriate agencies were contacted and indicated that the project is not anticipated to have significant long-term negative impacts on the environment.

### Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

## Project No. 103

<b>Applicant Name</b>	Joliet, Town of
<b>Project Name</b>	Water System Improvements
<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 625,000 TSEP
	\$ 606,567 RD Grant
	<u>\$ 741,359</u> RD Loan
<b>Total Project Cost</b>	\$2,072,926
<b>Amount Recommended</b>	\$ 100,000

### **Project Summary**

#### Project History

The Town of Joliet water system was originally constructed in the 1930s and currently consists of six wells, a distribution system, and an on-grade water storage tank. Deficiencies with the system include deteriorating water mains, undersized water mains for the delivery of fire flows, declining well production, pumphouse structures in poor condition, and a deteriorating and undersized water storage tank. Joliet proposes to rehabilitate two wells with airburst treatment, replace 4,800 feet of existing water main, construct two new pumphouses, and construct a new water storage tank.

#### Technical Approach

The PER evaluated alternatives for water supply, including construction of a new well, distribution, and water storage improvements. The preferred water supply alternative is the rehabilitation of two wells to re-establish the original capacity. The decision to rehabilitate the existing water supply was fairly well reasoned. The decisions to replace the water main and pumphouses also were appropriate.

There are several technical concerns with the application. The PER did not provide design year average day and peak day flow projections, information which is essential to evaluate the overall ability of the system to meet demands. The steel water storage tank alternatives were screened from further consideration with little justification. This alternative would likely have had much lower capital cost and should have been evaluated in detail. The PER did not include calculations to justify the tank size. The tank sizing is based partially on providing a fire flow of 2,500 gpd to the school. A technical memorandum included in the PER indicated that this fire flow would require extension of two 12-inch mains to the school. These main extensions are not included in the project or future proposed phases. The applicant did not provide a detailed cost estimate for the new well alternative. Thus, it is not possible to determine if the total cost for this alternative was accurate. Finally, the applicant did not justify the proposed annual O&M cost increase for the system. The proposed project should actually reduce, rather than increase, O&M costs.

The primary resource benefit of the project is the conservation and development of the groundwater resource. The implementation schedule is reasonable and includes finalization of financing in August 2011, completion of design by early 2012, and construction completion by the end of 2012.

Specific tasks to be accomplished:

- Air burst rehabilitate two wells;
- Install 4,800 lineal feet of water main;
- Construct two new pumphouses; and
- Install a new 500,000-gallon water storage tank.

## Resource and Citizen Benefits Analysis

The project has quantifiable RC&D benefits. Rehabilitation of the wells will benefit groundwater development. Replacement of leaky mains has groundwater conservation benefits. The project is consistent with the Joliet capital improvement plan (CIP). The application did not document good support from the public and businesses.

## Project Management

The proposed project involves three funding agencies and will require a significant grant administration effort. Joliet proposes a coordinated effort, among the town clerk, grant administrator and engineer, to administer the grant. The project management plan outlines the duties for the town clerk, engineer, grant administrator, attorney, bond counsel and mayor/council. The plan provides for a good staff of specialists to perform duties important to the project within their respective areas of expertise. Joliet will continue to inform the public through regularly scheduled board meetings and newsletters. The project management plan provides for contract management with regulatory and funding agencies, consultants, contractors, and other involved parties. The budget did not include interim interest on the RD loan, which will be required. The project contingency will cover this oversight. Except for this oversight, Joliet has allocated an adequate budget for grant administration of the project. The project budget includes funding to support the financial and administrative aspects of the project. The project is expected to be completed within two years.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$69,056	\$69,056
Professional& Technical	\$0	\$0	\$0	\$0
Construction	\$100,000	\$0	\$1,903,870	\$2,003,870
Total	\$100,000	\$0	\$1,972,926	\$2,072,926

The project budget is complete and includes adequate detail. Joliet and the proposed project are eligible for all of the funding sources in the proposed funding strategy. The projected residential water rate is \$44.01 per month. This rate includes the debt service for this project and the O&M costs. The new rate will affect 258 households. This proposed combined water and sewer rate is 143% of the DOC target rate, which indicates the project is affordable for residents. Cost estimates were provided for the options considered for each of the project components and were used to help determine preferred alternatives. Cost estimates are reasonable and adequate.

## Environmental Evaluation

Environmental impacts associated with this project were evaluated and no apparent adverse long-term impacts will result. Minimal short-term construction-related impacts will be controlled through permitting and proper construction practices.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.



## Project No.104

**Applicant Name** University of Montana  
**Project Name** An Experimental Assessment of the Ecological and Social Dimensions of Human-bear Conflict Mitigation

<b>Amount Requested</b>	\$ 99,067
<b>Other Funding Sources</b>	\$ 44,800 Applicant
	\$ 30,600 FWP
	\$ 6,000 Defenders of Wildlife
	\$ 9,000 Blackfoot Challenge
	\$ 9,250 Montana Waste Systems
	<u>\$ 182,733</u> Unfunded
<b>Total Project Cost</b>	\$ 381,450

**Amount Recommended** \$ 99,067

## **Project Summary**

### Project History

Human-bear conflicts have increased as the human population in western Montana has expanded. The conflicts have resulted in increased wildlife management costs and the loss of bears due to conflicts with humans. Lincoln, Montana is the epicenter of human-bear conflicts in western Montana and is the site for the proposed research project. FWP has estimated that as many as 40 black bears and an increasing number of grizzly bears in the Lincoln area are conditioned to human foods. The use of bear-resistant trash containers by residents and bear-resistant dumpsters at garbage collection sites has the potential to reduce the number of food-conditioned bears.

### Technical Approach

UM proposes a PhD research project to investigate the effects on bear behavior that result from converting the community to the use of bear-resistant trash containers and dumpsters. The applicant also considered no action and using non-invasive methods, such as hair snaring, to gather data. Neither of those alternatives would assess the factors that contribute to human-bear conflicts. The proposed study alternative would evaluate the effect of using bear-resistant human refuse containers on bear and spatial distribution. The resulting information would support recommendations to reduce human-bear conflicts in Montana and the mountain West. The research project is scheduled to begin in 2010 and conclude in 2013, with two years of field studies both before and after conversion to the use of bear-resistant containers.

Specific tasks to be accomplished:

- Trap and attach GPS tracking collars on at least 15 adult bears in the Lincoln area;
- Provide 350 bear resistant containers and 50 bear-resistant dumpsters to Lincoln community;
- Collect and analyze two years each of pre- and post-treatment (bear-resistant containers) data;
- Collect public perception and opinion data; and
- Produce and disseminate tangible information to the community, other agencies, wildlife managers, and landowner groups.

## **Resource and Citizen Benefits Analysis**

The study will provide FWP with additional management tools to reduce human-bear conflicts in Lincoln and elsewhere in western Montana. The study will serve as an example for other communities to follow to reduce human-bear conflicts. The research project could also result in increased public perception and understanding of how to reduce human-bear conflicts. If the project is successfully implemented, it could provide information to help Montana citizens who live in bear country to minimize conflicts with bears.

The results of this research project could be to reduce the loss of bears due to management actions resulting from human-bear conflicts. The project is consistent with the grizzly bear recovery program in northwestern Montana and with FWP and USFS bear management planning efforts. FWP, USFS and four organizations or businesses expressed support for the project.

### **Project Management**

The project will be managed by the leader of the Montana Cooperative Wildlife Unit at UM. This would be the first RRGL grant to be managed by the Wildlife Unit. Two public meetings have already been held in Lincoln to discuss the project and public meetings will be held throughout the project.

### **Financial Assessment**

<b>Budget Item</b>	<b>RRGL Grant</b>	<b>RRGL Loan</b>	<b>Match</b>	<b>Total</b>
<b>Administration</b>	\$0	\$0	\$	<b>\$0</b>
<b>Professional &amp; Technical</b>	\$99,067	\$0	\$282,383	<b>\$381,450</b>
<b>Construction</b>	\$0	\$0	\$0	<b>\$0</b>
<b>Total</b>	<b>\$99,067</b>	<b>\$0</b>	<b>\$282,383</b>	<b>\$381,450</b>

UM has committed \$108,350 to the project. FWP, Defenders of Wildlife, Blackfoot Challenge, and Montana Waste Systems have also offered financial support to this project. The estimated cost to purchase the bear resistant containers is \$182,733 and the source for that funding has not been identified. The project is not feasible without the purchase of the bear-resistant containers, but the containers would not be purchased until 2012. The RRGL grant would contribute to a four-year PhD-student stipend and tuition. The proposal included 15% University administrative overhead which is not eligible for RRGL funding.

### **Environmental Evaluation**

This project would not adversely affect the environment.

### **Funding Recommendation**

The DNRC recommends grant funding of \$99,067 upon development and approval of the final scope of work, administration, budget, and funding package.

## **Project No. 105**

<b>Applicant Name</b>	Bigfork County Water and Sewer District		
<b>Project Name</b>	Water Supply and Transmission Main Improvements		
<b>Amount Requested</b>	\$ 100,000		
<b>Other Funding Sources</b>	\$ 750,000	TSEP	
	\$1,790,000	SRF	
	\$ 14,000	Local	
<b>Total Project Cost</b>	\$2,654,000		
<b>Amount Recommended</b>	\$ 100,000		

### **Project Summary**

#### **Project History**

Bigfork is an unincorporated community. Bigfork is on the northeastern shore of Flathead Lake, at the mouth of the Swan River. The Bigfork County WSD provides water and sewer service to about 2,500 full-time, year-round residents and to about 3,100 residents during the summer. The water system consists of two water supply wells, a water distribution system generally composed of six- and eight-inch water mains, and three storage reservoirs. The district's engineering consultant has concluded that additional water supply is needed to meet maximum demand. The consultant also proposed a new transmission main to provide additional capacity and installation of an auxiliary generator to provide emergency power for the wells. The new well will allow the district to develop available groundwater resources in the area.

#### **Technical Approach**

The applicant's planning process generally followed the outline in the PER. Replacement of an existing transmission main that is relatively new and has adequate capacity for current flows is the most costly component of the proposal. Given the other water system needs of the community, the new transmission main might not be the highest priority component of this project. Alternatives to replacement of the existing main were not fully considered. The water modeling analysis in the PER was incomplete. Also, water rights needed for the new well were not adequately discussed. The schedule indicated design would initiate in the 1<sup>st</sup> quarter 2011 and the work would be completed in 1<sup>st</sup> quarter 2012. This schedule is aggressive and would require design initiation prior to grant award.

Specific tasks to be accomplished:

- Installation of a new water supply well;
- Installation of new transmission main from well field to Chapman Hill Road; and
- Installation of a back-up power supply.

### **Resource and Citizen Benefits Analysis**

This project will result in multiple benefits to natural resources. The development of a new water supply well will promote the sustainable use of groundwater that will be used for drinking water and fire protection within the community of Bigfork. The amount of water that can be supplied with a new well has been quantified. Further, because the local economy is largely based on tourism, the imposition of water restrictions, which are not currently in effect in the old town site, hotels, and golf course would have a negative impact, resulting in lost revenues, possibly lost jobs, and lost tax base. In addition, by increasing the capacity of the transmission main, less power would be required to pump water from the well field into the water distribution system located several miles away. No documentation of public support was provided.



## Project Management

The Bigfork WSD has a good project management structure in place. Planning work is complete. The project schedule cannot be achieved unless the district pays for design work with local funds. The public involvement plan was brief and the planning process lacked much public participation. Documentation regarding the procurement process was not provided.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$131,000	\$131,000
Professional & Technical	\$0	\$0	\$429,000	\$429,000
Construction	\$100,000	\$0	\$1,994,000	\$2,094,000
Total	\$100,000	\$0	\$2,554,000	\$2,654,000

The financial plan is viable but requires a large SRF loan and a maximum TSEP grant of \$750,000, which has not yet been secured. Water and sewer rates for the community are high and a wastewater project was recently completed. A backup plan of postponing the project was offered if the TSEP grant cannot be obtained.

## Environmental Evaluation

No significant adverse environmental impacts are anticipated with this project, assuming that proper construction practices are followed. Most of the work will be underground, resulting in limited overall impacts. The emergency generator should be noise attenuated.

## Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.

### Project No. 106

Applicant Name	Park County
Project Name	Shields River Surface and Groundwater Analysis, Planning and Long-Range Policy Formulation
Amount Requested	\$ 81,192
Other Funding Sources	\$ 2,550 Applicant
Total Project Cost	\$ 83,742
Amount Recommended	\$ 81,192

## Project Summary

### Project History

Park County proposes to characterize baseline groundwater and surface water quality in the Shields River watershed. The Crazy Mountain Basin gas deposit, a gas reserve that is estimated to be extensive and potentially highly productive, is located within the watershed. The gas reserve has generated recent interest from energy development companies. Park County intends to use the data from this study to manage and preserve its water resources, to further the goals identified in the county growth policy, and to identify future projects necessary to achieve those goals.

## Technical Approach

Park County considered no action, incremental planning, and minimal water quality testing. The applicant determined that the proposed comprehensive study of ground and surface water is necessary to accomplish the goals of management and preservation of surface and groundwater resources in the county.

The application lacked a detailed work plan and did not specify the intended location of eight proposed groundwater monitoring wells. Existing water quality data was not presented, although other water quality studies were referenced. The application did not reference some other key reports that might be relevant, namely the DNRC's Water Supply and Irrigation Efficiencies Investigations for the Upper Shields Watershed Association, 1999-2005. The implementation details presented in the application are not sufficient to determine whether the proposed effort is adequate to actually achieve the stated purposes of the study, which are to identify the depth, quantity, and quality of the groundwater resources within the study area. The project time line lacks specifics. Although the applicant stated that the study will be accomplished in one year, the cost estimates include tasks that occur from 2011 to 2013. Lack of funding to install wells for long-term monitoring might make either timeline unrealistic.

Specific tasks to be accomplished:

- Identify depth, quantity, and quality of groundwater resources in the study area;
- Install monitoring wells in locations where natural gas drilling is anticipated;
- Assess where drilling activities are most likely to affect groundwater;
- Form stakeholder groups to participate in the policy formulation phase;
- Identify critical fish and wildlife habitat;
- Identify threats to the watershed and work with energy companies in regards to road locations to minimize impacts to the resource;
- Assess where growth, development and mineral exploration activities are likely to affect surface and groundwater quality; and
- Develop policy to enable the county to protect and enhance its water resources, enforce its growth policy, and identify future projects to implement those policies.

## **Resource and Citizen Benefits Analysis**

The proposed project will generate data to be used as a tool by Park County to manage ground and surface water resources in the Shields River watershed. Prudent resource management will inherently protect and conserve the fish and wildlife, including the Yellowstone cutthroat trout. The applicant stated that the results of the study will facilitate policy creation at the county level to address the major threats to the watershed. The threats are well understood and documented, but the groundwater and surface water resources in the area are not. The study will provide the necessary baseline data to bridge the gap.

There are potential implications for the tourist industry in Livingston and promotion of recreation-based tourism on the Shields River, but these are difficult to specifically define or quantify. Results of the study have the potential to be used to promote sustainable agricultural practices by other agencies and individuals.

This project is not specifically coordinated with other actions, but the applicant highlighted that study results will provide scientific data necessary for the implementation of the Park County Growth policy (2008) and enable enforceable action. Multi-use benefits of the project include managing energy exploration, subdivision development, and preservation of the agricultural economy. Local government agencies and non-profit organizations submitted letters of support for this project.

## Project Management

The management team for this study is experienced and adequate in size. The team is familiar with state procurement laws and has managed numerous grants of this and larger size. A public input component is well thought out and included with each phase. The project director has extensive experience in managing projects and supervising consultants. The project is divided into three phases and expected to be accomplished in one year, unless funding is received in the winter months. Installing monitoring wells and gathering useable data to incorporate into policy formation will likely to exceed this time line and the initial budget. The proposal lacks a detailed work plan and is difficult to verify that the project is well planned or ready for implementation.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$10,656	\$0	\$2,550	\$13,206
Professional & Technical	\$70,536	\$0	\$0	\$70,536
Construction	\$0	\$0	\$0	\$0
Total	\$81,192	\$0	\$2,550	\$83,742

The project costs reported above are adequate to cover the tasks of field sampling and reporting and are based on an estimate provided by an environmental consultant. The project manager reassigned project administration costs of the consultant to the county to arrive at a final estimate for professional/technical services. The overall project cost is not sufficient to include installation of the monitoring wells and the associated reporting costs that are included as part of the project. The estimated cost to drill eight groundwater monitoring wells, \$322,660, is extremely high and will exceed the requested funds. That work cannot realistically be accomplished as part of this project. It is unclear whether the project goals can be accomplished without the long-term water quality monitoring wells or another funding source exists to cover that expense.

## Environmental Evaluation

There are few adverse environmental impact expected to result from completion of this study. The installation of groundwater monitoring wells can lead to short and, potentially, long-term impacts, especially in sensitive areas. Those impacts include weed introduction, soil compaction, and disturbance of wildlife. These can be mitigated by minimizing working in sensitive areas and developing weed and reseeding plans.

## Funding Recommendation

The DNRC recommends grant funding of \$81,192 upon development and approval of the final scope of work, administration, budget, and funding package.



## Project No. 107

**Applicant Name** Petroleum County Conservation District  
**Project Name** Horse Creek Coulee Water Storage

**Amount Requested** \$ 82,286  
**Other Funding Sources** \$ 29,900 MMWG  
**Total Project Cost** \$ 112,186

**Amount Recommended** \$ 82,286

### **Project Summary**

#### Project History

MMWG was formed in 2005 with the goal of investigating potential water storage options to mitigate impacts related to low flows in the Musselshell River. The MMWG initially identified Butts Coulee as the preferred site for a water storage project. The preferred location was later shifted to Horse Creek Coulee so that a gravity flow system could be constructed and long-term O&M costs would be reduced. A PER was completed for the Horse Creek Coulee location. Additionally, two water rights applications were submitted in December 2009. The applicant proposes to complete a geotechnical study and the preliminary feasibility design.

#### Technical Approach

The applicant did not consider alternatives to the proposed geotechnical study. The geotechnical study will provide information for the design of the dam and will contribute to Safety of Dams permitting. A topographic survey will also be completed and will provide information to calculate construction quantities. All proposed work will contribute to the finalization of the preliminary design of the water storage project.

Specific tasks to be accomplished:

- Complete a topographic and geologic survey;
- Conduct geotechnical drilling, sampling, and testing; and
- Complete a geotechnical analysis, including an assessment of slope stability, seismic, seepage, and consolidation.

### **Resource and Citizen Benefits Analysis**

The geotechnical study is critical to demonstrating that the water storage project is technically feasible and viable. The study will complete the preliminary design and contribute to the development of the water storage project. The water storage project will store 3,572 acre-feet of water. Several other water user groups provided letters of support for the water storage project.

### **Project Management**

The project management appears adequate. An engineering firm has been selected through a competitive process to complete the geotechnical study.

### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$6,132	\$0	\$14,800	\$20,932
Professional & Technical	\$76,154	\$0	\$15,100	\$91,254
Construction	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$82,286</b>	<b>\$0</b>	<b>\$29,900</b>	<b>\$112,186</b>

MMWG will provide matching funds and in-kind contributions. The requested funds will be applied to completion of the preliminary design. Final design and construction is estimated to cost \$4,677,511. Funding for final design and construction is expected to come from government appropriations, but no funding is currently secured.

### **Environmental Evaluation**

There are no environmental impacts from the geotechnical study.

### **Funding Recommendation**

The DNRC recommends grant funding of \$82,286 upon development and approval of the final scope of work, administration, budget, and funding package.

### **Project No. 108**

<b>Applicant Name</b>	Shelby, City of		
<b>Project Name</b>	West Interceptor Water System		
<b>Amount Requested</b>	\$	100,000	
<b>Other Funding Sources</b>	\$1,090,294	SRF	
	<u>\$ 750,000</u>	TSEP	
<b>Total Project Cost</b>	\$1,940,294		
<b>Amount Recommended</b>	\$	100,000	

### **Project Summary**

#### **Project History**

The Shelby water system includes an aging elevated water storage tank, located at the airport that was erected in 1910. The tank has lead-based paint coating and poses a potential public health and safety risk. The airport tank has a volume of 100,000 gallons and generally provides water storage for the north side of Shelby, including the area around the airport. Overall, the city water system has total storage capacity that is in excess of the minimum capacity recommended by the DEQ. Because of the excess storage, the city has to take measures to keep water in the airport tank from becoming stagnant. In addition, the low elevation of the tank can create inadequate operating pressures. The primary goal of the project is to alleviate the issues and concerns associated with the existing airport tank.

#### **Technical Approach**

To address the issues associated with the existing airport tank, Shelby evaluated no action, recoating the existing airport tank with non-lead paint, eliminating the existing airport tank, eliminating existing airport tank and connecting the area to the prison tank and high pressure zone, or replacing the existing airport tank with a new 100,000-gallon elevated tank. Shelby proposes to abandon the existing 100,000-gallon airport tank and install a new 12-inch interceptor pipeline from the prison tank to the airport area. Water supply to the area currently served by the airport tank would then be provided from the prison tank and new pipeline.

The PER listed six selection criteria for comparing the alternatives, but only briefly discussed each of them. The PER did not analyze each alternative relative to the criteria, nor was there a selection matrix or comparative methodology. The PER recommended an alternative that cost approximately \$800,000 more than the least costly alternative but did not explain the reason for that recommendation. The proposed alternative is sound, but there is some doubt whether it is the best option. The project is scheduled to begin construction in the fourth quarter 2011 and be complete by the third quarter 2012.

Specific tasks to be accomplished:

- Abandon and remove existing 100,000-gallon elevated airport tank; and
- Construct new 13,500 foot long, 12-inch diameter interceptor pipeline from the prison tank to the area currently served by the airport tank.

### Resource and Citizen Benefits Analysis

The proposed project does not appear to have any direct natural resource benefits. The project will be coordinated with the Shelby CIP and Growth policy. The project appears to have solid public support. Shelby held two public hearings to present and discuss the proposed project and grant applications and the minutes and outlines from both public hearings were provided in the grant application. Project information was also provided to the public via the mayor's weekly radio program. The application included 13 letters of support.

### Project Management

Shelby has adequate and experienced staff who will manage the project. Shelby will inform and involve the public through city council meetings and weekly project meetings conducted by the mayor. The application included a thorough discussion of contract management. The project will be ready for implementation in the next two years.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$97,190	\$97,190
Professional & Technical	\$0	\$0	\$281,152	\$281,152
Construction	\$100,000	\$0	\$1,461,952	\$1,561,952
Total	\$100,000	\$0	\$1,840,294	\$1,940,294

The city plans to fund the project with the RRGL and TSEP grants and with an SRF Loan. The project budget and funding strategy are reasonable. Shelby has submitted the grant applications to the DOC and DEQ. The city noted that if a source of funding is not obtained, the city will either seek funding from other avenues or delay the work until funding becomes available. The water system currently serves 1,284 users, including both residential and commercial customers. The current population of Shelby is estimated to be approximately 3,552. Monthly water user rates will increase from \$47.54 to \$53.15 as a result of the project. The current wastewater system monthly user rate is \$32.00.

### Environmental Evaluation

Other than short-term construction related impacts, this project will not cause significant environmental impacts. The grant application included a completed uniform environmental checklist.

### Funding Recommendation

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.



## **Project No. 109**

<b>Applicant Name</b>	Sidney, City of		
<b>Project Name</b>	Optimizing Water Development from the City of Sidney Well Field		
<b>Amount Requested</b>	\$ 100,000		
<b>Other Funding Sources</b>	\$ 19,091	Applicant	
	\$ 23,133	MBMG	
<b>Total Project Cost</b>	\$ 142,224		
<b>Amount Recommended</b>	\$ 100,000		

### **Project Summary**

#### **Project History**

Sidney is in the east-central part of Montana in Richland County. The city proposes to model the groundwater resources underlying the city and parts of the Yellowstone River valley. The city will use the groundwater model to better manage this resource. The model will also allow local development to match the availability of water.

#### **Technical Approach**

The preferred alternative proposes to establish a long-term monitoring network to evaluate water-level fluctuations, install monitoring wells adjacent to existing production wells to document production impacts, and to estimate the potential volume of water available for development. In addition to the preferred alternative, the applicant considered three other alternatives. The no action alternative would allow development of the groundwater resource without adequate planning. The second alternative would prohibit additional groundwater development in order to protect the Sidney community system. The third alternative was drilling twenty to thirty additional wells.

Specific tasks to be accomplished:

- A MOU will be established between the City of Sidney and the MBMG upon the approval of a final scope of work;
- New monitoring wells will be installed and water-resource data will be collected and compiled; and,
- A conceptual model of the aquifer will be developed to aide in the development of a MODFLOW groundwater-flow model.

### **Resource and Citizen Benefits Analysis**

The primary benefit associated to the groundwater resource is the determination of the amount of water available in the Sidney well field. This information will allow Sidney to protect its municipal water supply. By better understanding the hydrology and developing a groundwater management model of the aquifer system, the city will conserve and allow the safe and scientifically sound development of the groundwater resource. Sidney will provide the Richland County CD with modeling information that will aide in the development of the groundwater study.

### **Project Management**

The City of Sidney will supervise the project. The city will develop an MOU with the MBMG for technical work. The city will track project schedules, review invoices, and submit quarterly reports to DNRC. The city will establish a TAC, composed of the city council, a water department representative, and other interested residents. The committee will advise and interact with the MBMG staff and provide information to the public throughout the project.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$9,091	\$0	\$19,091	\$28,182
Professional & Technical	\$75,909	\$0	\$23,133	\$99,042
Construction	\$15,000	\$0	\$0	\$15,000
Total	\$100,000	\$0	\$42,224	\$142,224

The applicant provided a general estimate of project costs for the preferred alternative, based on previous projects conducted by MBMG. The administrative costs might be excessive while the cost estimates for well construction might be low. These cost estimates should be reviewed before contracting.

The actual costs associated with the alternatives were undefined. The applicant stated that there is no cost initially to the no action alternative but that disputes over water rights and development rights would occur. Disputes would result in personal costs of litigation, remediation, and lost potential income. The costs of prohibiting additional development in the aquifer were identified as some legal costs, as well as the loss of economic development and the personal loss to citizens who would be denied water for residential use or crop production. The third alternative, drilling twenty to thirty additional wells, would have a cost four to six times greater than the proposed alternative. If the grant is not awarded, Sidney will not continue the study plans.

## Environmental Evaluation

In developing a monitoring network for the creation of a groundwater model, some short-term soil and vegetation disturbances may occur from well construction. No long-term impacts should result.

## Funding Recommendation

The DNRC recommends grand funding of \$100,000 upon approval of a final project scope of work, administration, budget and funding package.

### Project No. 110

Applicant Name	Thompson Falls, City of
Project Name	Transmission Main Replacement
Amount Requested	\$ 100,000
Other Funding Sources	\$ 443,850 TSEP
	\$ 310,000 STAG WRDA
	\$ 34,150 SRF
Total Project Cost	\$ 888,000
Amount Recommended	\$ 100,000

## Project Summary

### Project History

The City of Thompson Falls is unable to provide adequate water to the upper pressure zone of the municipal water distribution system. A single transmission main supplies both the upper pressure zone, through two pressure reducing valves, and the Jefferson Street water storage tank. While the Jefferson Street tank fills, the head loss in the transmission main drops the water pressure below that needed to service the upper zone. During tank filling, water supply to the upper pressure zone is temporarily interrupted, causing low pressures and an inability to produce fire flows.

The head loss in the transmission main probably has increased over time due to normal deterioration of the water main. The goal of this project is to restore adequate pressures to serve the upper pressure zone by replacing the transmission main.

#### Technical Approach

The city only evaluated complete replacement of the transmission main. Other options were not identified or considered because replacement is the only reasonable solution. The project design is expected to be complete in spring 2012, with construction complete in fall 2012.

Specific tasks to be accomplished:

- Replace 8,050 lineal feet of transmission main with 10-inch diameter C900 PVC pipe; and
- Install three fire hydrants for manual air release.

#### **Resource and Citizen Benefits Analysis**

This project addresses serious public health and safety issues, but it does not have many significant benefits to renewable resources. The transmission line is known to leak, but the quantity of leakage is unknown and the benefit to groundwater conservation cannot be determined. The application mentioned possible energy savings in operating disinfection equipment because of the reduction in water being treated due to repairing the leaks. The energy conservation would be minor.

The project will be used by the public, follows the recommendations of a CIP, has public support, and corrects a public health and safety issue.

#### **Project Management**

The City of Thompson Falls has successfully constructed several water system improvement projects during the last six years and is experienced in project management. The project management plan is adequate and the project can easily be implemented within the next two years. The city has selected a project engineer and contractor will be awarded the project, following established procurement procedures.

#### **Financial Assessment**

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$0	\$0	\$42,350	\$42,350
Professional & Technical	\$0	\$0	\$151,850	\$151,850
Construction	\$100,000	\$0	\$593,800	\$693,800
Total	\$100,000	\$0	\$788,000	\$888,000

Award of the STAG/WRDA grant is uncertain. If the STAG/WRDA funding is not secured, Thompson Falls will apply for an RD loan to fund the balance of the project. This project will result in estimated increase in the residential user rate by \$0.35 per month.

#### **Environmental Evaluation**

The project will have the short-term impact of increased noise and dust levels during construction. The project will also create many long-term benefits including a more reliable water system and improved fire flows.

#### **Funding Recommendation**

The DNRC recommends grant funding of \$100,000 upon development and approval of the final scope of work, administration, budget, and funding package.



**The following projects, listed alphabetically, are not recommended to receive grant or loan funding.**

<b>Applicant Name</b>	Cascade County Conservation District
<b>Project Name</b>	Whitmore Ravine Erosion Control and Storm Drainage, Phase 1
<b>Amount Requested</b>	\$ 100,000
<b>Other Funding Sources</b>	\$ 300,000 RD Grant
	\$ 500,000 WRDA
	\$1,516,148 Federal Appropriation
	\$ 572,049 SRF
	<u>\$ 900,000</u> NRCS EQIP
<b>Total Project Cost</b>	<u>\$3,888,197</u>
<b>Amount Recommended</b>	\$ 0

### **Project Summary**

#### Project History

An increase in the impervious area on the 3,488-acre MAFB has resulted in higher volumes and velocities of storm runoff being conveyed by the east, middle and west forks of Whitmore Ravine. Whitmore Ravine receives runoff from MAFB through several outfalls on the north side of the base and eventually drains to the Missouri River between Rainbow and Cochrane Dams. Increased flows over the past approximately 70 years, highly erodible soils, and continual saturation have lead to significant erosion in the West and Middle Forks of Whitmore Ravine. Public safety, water quality, and soil management now are important concerns. Erosion has taken numerous acres of farmland. High, unstable banks in the ravine and a large silt delta in the Missouri River at the mouth of Whitmore have contributed to the sediment impairment of segment 13 (MT41Q001-013) of the Missouri River.

#### Technical Approach

The applicant has prepared previous planning documents exploring 14 corrective alternatives for improvements within and outside the boundaries of MAFB. MAFB has since re-evaluated and began implementing runoff retention improvements within its boundaries and the original evaluation for off-base improvements is now obsolete. The latest PER screens 10 alternatives and provides detailed analysis of five of those, including no action. The recommended alternative is to install approximately 2½ miles of piping within the West Fork (60-inch diameter pipe) and Middle Fork (42-inch diameter pipe) of Whitmore Ravine to carry all runoff, re-contour and fence the West Fork, and construct a wetland mitigation pond. The proposed piping sizes in the West and Middle forks appear to be larger than what is necessary to convey the expected flows and the PER lacks a comparison of various pipe materials.

Specific tasks to be accomplished:

- Install 7,100 feet of 60-inch diameter pipe plus an energy dissipation structure in the West Fork;
- Install 6,050 feet of 42-inch diameter pipe plus an energy dissipation structure in the Middle Fork;
- Re-contour and fence the West Fork for safety purposes; and
- Install 1,100 feet of 6-inch diameter pipe to feed and drain a wetland mitigation pond.

### **Resource and Citizen Benefits Analysis**

The primary natural resource benefits that will result from this project include water quality preservation through sediment reduction, fisheries preservation through sediment reduction, and soil management through erosion control. There will also be enhancements to public safety because the project will eliminate the unstable vertical walls of the ravine which are up to 50' tall in some areas.

## Project Management

The project management plan lacks detail on the methods for administering the six different funding sources; how the debt incurred from the proposed SRF loan will be serviced; election procedure; and, the public involvement process.

## Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$30,000	\$0	\$0	\$30,000
Professional & Technical	\$0	\$0	\$539,608	\$539,608
Construction	\$70,000	\$0	\$3,248,589	\$3,318,589
Total	\$100,000	\$0	\$3,788,197	\$3,888,197

More than half of the proposed phase 1 project funding is from WRDA (\$500,000) and Federal Appropriation (\$1.52 million). Project is also not on the 2010 SRF IUP. Some questions exist on the viability of the financial package. If WRDA and/or Federal Appropriation funds are not secured, there does not appear to be a backup plan for funding.

## Environmental Evaluation

Overall long-term environmental impacts are expected to be positive. The project will reduce soil erosion and sediment impacts to the Missouri River. Some wetlands will be destroyed, but the project plan includes construction of a mitigation wetland. Other short-term, construction-related impacts can be expected, but it is anticipated that they will be minimized and mitigated to the greatest extent possible.

## Funding Recommendation

The DNRC does not recommend grant funding at this time. DNRC recommends re-application after the major funding has been secured and project management has been better defined.

<b>Applicant Name</b>	Paradise Valley Irrigation District
<b>Project Name</b>	Main Canal Water Measurement

<b>Amount Requested</b>	\$ 64,116
<b>Total Project Cost</b>	\$ 64,116

<b>Amount Recommended</b>	\$ 0
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## Project Summary

### Project History

Existing efforts to measure water inflow into the main canal that serves the Paradise Valley Irrigation District are complicated due to the flat gradient, steep banks, backwater effects, and seasonal vegetation growth within the canal. The district has been working with the DNRC to improve measurement accuracy, but with only marginal success. Accuracy of existing inflow measurements has been estimated to be 20% of the actual flow. At times, significantly more water is diverted into the canal than is needed. At other times, less water than is required to meet irrigation needs is available.

### Technical Approach

The district evaluated three different systems for improving inflow measurement, including a ramp flume, a precast box culvert canal section with bottom mount Doppler flow meter, and a concrete-lined control section with a side mounted Doppler flow meter. The ramp flume would not be feasible due to the flat gradient of the main canal. The precast box culvert would not be feasible due to unacceptable head loss

and the inability to access the flow meter for maintenance without dewatering the canal. Costs for the three alternatives would be similar. Therefore, based on this analysis and budget considerations, the district proposes to install a 50-foot long concrete-lined control section with a side mounted Doppler flow meter, foot bridge, and permanent staff gauge.

Installation of the control section and flow meter should allow the irrigation district to match the quantity of water diverted into the canal to irrigation demand more accurately. This will ensure delivery of the required quantity of water to the irrigators while leaving unneeded water in the Milk River. If the grant is approved, all construction work is anticipated to be completed during fall 2011. The Doppler flow meter will be deployed and the canal control section rated during summer 2012.

Specific tasks to be accomplished:

- Construct 50-foot long, 40-foot wide concrete lined canal control section;
- Install side-mounted, tracked Doppler flow meter,
- Install foot bridge and permanent staff gauge; and
- Deploy the meter and rate the control section.

### Resource and Citizen Benefits Analysis

The proposed project is projected to increase the accuracy of inlet flow measurements to the Paradise Valley Irrigation District main canal from about 20% to about 5%. This improvement in inflow flow measurement may conserve an estimated 26 cfs of water that presently is wasted. The conserved water would remain in the Milk River.

A more dependable supply of irrigation water will allow landowners within the district to improve their existing irrigation water management and should result in higher crop yields. More accurate flow measurements should also help to resolve existing water rights issues along the Milk River.

The Milk River Watershed Alliance, the Blaine County CD, and the MID submitted letters of support for this project.

### Project Management

The proposed project management appears reasonable, complete, and easily implementable.

### Financial Assessment

Budget Item	RRGL Grant	RRGL Loan	Match	Total
Administration	\$	\$0	\$0	\$0
Professional & Technical	\$21,764	\$0	\$0	\$21,764
Construction	\$42,352	\$0	\$0	\$0
Total	\$64,116	\$0	\$0	\$64,116

The application presented costs for the project. The applicant will provide matching in-kind services for management and construction, but the budget did not include estimates for those costs. The in-kind contribution is likely secure. An increase in the existing assessment of \$21.00 per acre to \$30.00 per acre is projected. The district presently serves 8,310 acres. There is no plan to expand the district as part of this project.



### **Environmental Evaluation**

Short-term construction impacts will be limited to small areas and will be relatively brief in duration. Long-term environmental impacts are positive in terms of water conservation and more efficient irrigation water delivery.

### **Funding Recommendation**

The DNRC recommends denial of this grant application. The 2007 Legislature funded a project sponsored by the Paradise Valley Irrigation District. That project was terminated and the \$10,736 of remaining funds were reverted because the sponsor did not submit an adequate final project report. Upon receipt of an adequate final report for the 2007 project, the sponsor then would be eligible to apply again for a RRGL grant.

## **CHAPTER III**

### **Coal Severance Tax Loans to Public Entities**

#### **Application Administration and Project Review Procedures**

The DNRC RDB accepts applications for public loans until May 15 of each even-numbered year at the same time grant applications are due from public applicants under this program. A \$250 application fee is required with each application for a large public loan. These loans are funded with proceeds from the sale of coal severance tax secured bonds and frequently are offered at a subsidized interest rate. The subsidy is paid with coal tax revenues.

#### **Project Solicitation**

DNRC solicits applications for public loans through the same process used to solicit other public grant and loan applications, as described in Chapter II. The availability of low-interest loan funds is widely advertised through direct mailings, press releases in newsletters and commercial newspapers, and with contact made during promotional local workshops conducted by DNRC, the DOC, and the DEQ. The same application form is used to solicit both grant and loan applications.

#### **Application Review**

DNRC evaluates all public loan applications received by the deadline for completeness. DNRC notifies applicants concerning missing documentation, application fees, or other basic requirements and allows applicants time to submit additional material. Then, DNRC gives the completed applications to the team of key reviewers for review and evaluation. The team follows a methodical review process (Chapter II, Figure 1). The review team determines the technical, financial, and environmental feasibility of each loan application.

#### **Funding Recommendations**

DNRC assigns a favorable funding recommendation to all feasible public loan applications that are eligible for funding and demonstrate the applicant's ability to repay the loan. The DNRC recommendation includes the amount of financing needed to meet project and financing expenses and a suggested interest rate. There is no maximum allowable loan amount. Public loans are limited to the amount an applicant has the ability to repay under the standard repayment terms and by the bonding capacity of DNRC.

#### **Availability of Loan Funds**

The 1981 Legislature adopted SB 409 to provide up to \$250 million in Montana coal severance tax bonds. Coal severance tax bonds are issued to finance projects and activities in the state that the Legislature specifically authorizes. Montana statutes dictate that loans made from coal severance tax bond proceeds will be administered by DNRC and that DNRC will review each project to determine its technical and financial feasibility. The Legislature authorizes loans, in part, based on the DNRC review and recommendation.

Although the legislation was adopted in 1981, coal severance tax loans were not issued for the first few years because an appellant challenged the constitutionality of the bonding authority under this program. In February 1984, the Montana Supreme Court ruled, in *Grossman v. State of Montana*, that the bonding authority was constitutional. The first Montana coal severance tax bond was sold to finance loans during that same year.

In September 1985, the Board of Examiners adopted a general resolution pursuant to which all subsequent coal severance tax bonds have been issued. A copy of this resolution may be obtained from DNRC. The general resolution requires that the bonds issued will be secured on a parity basis. Thus, all subsequent coal severance tax bond issues have the same rights to proceeds flowing into the trust fund to pay bondholders. However, to assure bondholders that there always will be enough coal severance tax revenue to meet debt service payments, the general resolution restricts the cumulative amount of bonds that can be issued. This restriction is more constraining than the \$250 million statutory limit. If the annual debt payments exceed 50% of the coal severance tax revenue allocated to the trust plus 50% of the loan repayments received from local government borrowers, additional coal severance tax bonds may not be issued.

### **Loan Repayment**

Coal severance tax revenue is used to pay the difference between payments received from local government borrowers and the State coal severance tax bond payments. Thus, coal severance tax bonds are repaid with revenue from payments from local government borrowers, along with coal severance tax proceeds.

To implement these repayment provisions, the statute established a fund structure within the permanent coal tax trust fund. Fifty percent of coal severance tax proceeds flowing to the permanent trust fund are first deposited in the coal severance tax bond fund. A portion of the proceeds deposited in the bond fund are transferred to the debt service account to pay for the interest rate subsidies. An amount equal to a year's debt service payment on all coal severance tax bonds is held in reserve in the bond fund.

Proceeds that exceed the subsidy payments and reserve requirement are transferred to the coal severance tax school bond contingency account. This fund was established to provide security to school bonds issued during the 1993 biennium. The remaining proceeds are then transferred into the Treasure State Endowment Fund and the Coal Severance Tax Permanent Fund, which retains the remaining 80 % of this income.

With the exception of the Treasure State Endowment Fund, the interest earnings associated with all account balances are transferred to the Coal Severance Tax Income Fund. These interest earnings are then transferred to the general funds.

### **Interest Rates**

Loans may be provided at a rate less than the rate at which the State bond is sold for all or part of the term. During the financial review of each loan application, DNRC prepares a funding recommendation that may include a recommended interest rate subsidy based on the affordability of the proposed project. Recommendations are developed to be consistent with past direction provided by the Long Range Planning subcommittee of the Legislature. In 1987, the Legislature directed that the recommended subsidy for municipal projects typically be based on the user rate as a percentage of the "median household income." The schedule for subsidies with respect to municipal projects is presented below:

1. If less than 1% of the median household income is required to pay user rates, no subsidy is recommended;
2. If the user rate is at least 1% but less than 2%, a 1% interest rate subsidy for 5 years is recommended;
3. If the user rate is at least 2% but less than 4%, a 2% interest rate subsidy for 5 years is recommended; and,
4. If the user rate is more than 4% of the median household income, a 3% interest rate subsidy for 5 years is recommended.



The basic interest rate on coal severance tax loans is determined by the bond market at the time coal severance tax bonds are sold. The rate of interest on most loans from the program will vary in accordance with the rate on the State coal severance tax bonds. The basic rate of interest for each public loan financed from the proceeds of a single bond issue is the same. Subsidies may vary depending on legislative authorization.

## **Project Management**

DNRC reviews each public loan application to determine whether the project is financially feasible. A project is considered financially feasible if sufficient funds can be made available to complete the project and if sufficient revenue can be obtained to repay the loan and to operate, maintain, and replace the project when it becomes necessary to do so. After a public loan is authorized by the Legislature and the project sponsor is ready to secure financing, DNRC performs a more thorough review of the applicant's ability to repay the loan. At this time, DNRC may require access to the applicant's most recent financial statement, budget documents, and other documentation in order to assess whether the proposed project really is financially feasible.

If the borrower provides documentation of the ability to repay a loan and all legal requirements to incur debt are met, a bond purchase agreement is prepared and executed. The agreement includes specific requirements and covenants with respect to a project or improvements to the project being financed. Borrowers must acquire all property rights necessary for the project, including water rights, rights-of-way, and interest in land needed for a project's construction, operation, and maintenance. As appropriate, these and other stipulations also are contained in a bond resolution. Unless otherwise authorized, each loan, including principal and interest, shall be payable over a term approved by DNRC, not to exceed the term authorized by the Legislature. The cost of issuing the coal severance tax bond also is paid by borrowers.

Each borrower must agree not to sell, transfer, lease, or otherwise encumber the project, any portion of the project, or interest in the project without prior written consent from DNRC. Further, the borrower must notify DNRC of any changes or modifications in a project, either before or during construction. Borrowers are required to acquire and maintain, with respect to the project, property, casualty, and liability insurance. Insurance policies must name DNRC as a certificate holder for notification purposes.

For local government revenue bonds, borrowers must establish a system fund to segregate the revenue of the system or district. Within the system or district fund, the following accounts are generally established: construction account, operating account, revenue bond account, reserve account, replacement and renewal account, and surplus account. These accounts ensure that the system revenue and other funds are properly applied in a manner reasonably satisfactory to DNRC.

Loans are disbursed by warrants drawn by the State Auditor or by wire transfers authorized by the State Treasurer, in accordance with the provisions of this rule and the bond resolution. No disbursement of any loan funds shall be made unless DNRC has received from the borrower (1) a duly adopted and executed bond resolution in a form acceptable to DNRC; (2) an executed bond in a principal amount equal to the loan amount, also in a form acceptable to DNRC; (3) a certificate from an official of the governmental unit stating that no litigation is threatened or pending that would challenge the governmental unit's authority to undertake the project, to incur the loan, to issue the bonds, and to collect revenue; (4) an opinion from the bond counsel that the bond is a valid and binding obligation of the borrower payable in accordance with its terms; and, (5) any other closing certificates or documents that DNRC or the bond counsel may require.

## **Project Monitoring**

Borrowers must maintain proper and adequate records of accounts that show the complete and correct entries of all receipts, disbursements and other transactions related to the project and, if applicable, the monthly gross revenue derived from project operations. Any segregation and application of the gross revenue resolution also must be shown in such reasonable detail as may be determined by the borrower, in accordance with generally accepted accounting practices and principles.

Loan agreements require quarterly progress reports during construction, expenditure reports during construction, a final project report, and annual financial reports over the term of the loan. Projects are closely monitored during construction.

Within 180 days after the close of each fiscal year, the borrower must prepare and supply to DNRC an appropriate financial report with respect to the project for such fiscal year. Where applicable, this report includes a statement that details the project's income and expenditures for the fiscal year; the identification of capital expenditures that separate them from operating expenditures; a balance sheet as of the end of the fiscal year; the number of premises connected to the project at the end of the fiscal year; and, the amount of cash on-hand in each account of the fund at the end of the fiscal year. The borrower must also provide a list of the insurance policies and fidelity bonds, in force at the end of the fiscal year that shows the amount of coverage, the risks covered, the name of the insurer or surety, and the expiration date of the policy or bond.

The coal severance tax loans and resource development public loan balances as of September 2010 are presented below (Figure 4). The coal severance tax loans are shown in Figure 5. Public loans authorized in 2009 and seeking reauthorization are shown in Figure 6.

**Figure 4 Coal Severance Tax Loans / Resource Development Public Loan Balances**

Applicant	Balance Due	Applicant	Balance Due
Antelope County Water and Sewer District	\$ 30,756	State Water Projects Bureau, DNRC	
Beaverhead County/Red Rock Water and Sewer District	1,235,275	Ackley Lake Dam Rehabilitation	165,841
Bitterroot Irrigation District	491,893	Bair Dam	633,617
Bitterroot Irrigation District	326,130	Broadwater-Missouri Pipe	205,870
Bozeman, City of	29,005	Deadmans Basin	244,369
Buffalo Rapids Irrigation District	642,325	Deadmans Basin Water Users Association	45,372
Daly Ditches Irrigation District	242,785	Deadmans Basin Water Users Association	387,250
Daly Ditches Irrigation District	339,485	East Fork Siphon	194,932
Dutton, Town of	23,237	East Fork-Rock Creek Dam	350,000
Dutton, Town of	4,157	Martinsdale Reservoir	80,966
East Bench Irrigation District	243,747	North Fork of the Smith Water Users Association	350,638
Fairfield, Town of	128,830	Nevada Creek Dam	345,453
Flathead County-Evergreen Water and Sewer District	885,778	Petrolia Water Users Association	170,067
Forsyth, City of	117,899	Ruby River Water Users Association	2,000,000
Fort Benton, City of	263,773	Sun Prairie Village County Water and Sewer District	53,585
Huntley Irrigation District	133,090	Tin Cup	124,025
Huntley Irrigation District	48,708	Wibaux, Town of	21,284
Huntley Irrigation District	170,145		
Huntley Irrigation District	554,806		
Hysham, Town of	94,298		
Lower Willow Creek Irrigation District-Granite County	36,846		
Malta Irrigation District	1,520,166		
Mill Creek Irrigation District	517,722		
Mill Creek Water and Sewer District	351,454		
Sage Creek County Water District	199,225		
		<b>TOTAL</b>	<b>\$ 14,004,804</b>



**Figure 5      Coal Severance Tax Loans / Water Development Public Loan Balances**

<b>Applicant</b>	<b>Balance Due</b>
Antelope County Water and Sewer District	<u>\$ 53,351</u>
<b>TOTAL</b>	<b>\$ 53,531</b>

**Figure 6      Public Loans Authorized in 2009 and Seeking Reauthorization**

<b>Applicant</b>	<b>Amount</b>	<b>Rate</b>
DNRC/Ruby Dam Rehabilitation	\$6,000,000	Market not to exceed 4.5%
DNRC/CARDD	\$3,000,000	Market not to exceed 3.0%
Sunset Irrigation District	\$1,465,266	Market not to exceed 4.5%

## **CHAPTER IV**

### **Renewable Resource Grants and Loans to Private Entities**

#### **Grant Application Administration and Project Review Procedures**

Applications for water-related projects from any individual, association, for-profit corporation, or not-for-profit corporation, may be considered for funding. Only water-related projects may be funded. Projects must have quantifiable benefits that will exceed costs. Projects must also provide public benefits in addition to any private benefits.

#### **Grant Project Solicitation**

To solicit applications from private entities that provide significant public benefits, DNRC has chosen to target public water systems operated by private water user associations and small agricultural projects that need help. The agricultural projects have included inspection of private high-hazard dams and water measuring devices on chronically dewatered streams. DNRC has contacted the MRWS to help solicit projects from private drinking water systems. Dam and water measuring projects were solicited by the Dam Safety Bureau and the Water Management Bureau of the WRD of DNRC. In addition to the projects solicited by the above-mentioned organizations, DNRC also accepts applications at any time from any water system. Grantees are given one year to complete the project.

Information requested in the application includes:

- Name, address, and telephone number of applicant;
- Description of the problem, including the history and alternative methods of rectifying the problem;
- Complete budget information including funding sources and cost comparatives of the alternatives;
- Description of the public and private benefits of the project and the need for and urgency of the project;
- Environmental impacts of the project, both positive and negative; and
- Technical information and approval, if necessary by the DEQ, EPA, or other responsible enforcement agency.

#### **Grant Application Review**

All applications received by MRWS were evaluated and ranked according to the extent each application presents a project that is critically needed, will protect public health, provides opportunities for resource conservation, and improves the environment. Applications received by Dam Safety and Water Management were reviewed by those units, and submitted to Resource Development Bureau with a recommendation. Other applications are also evaluated by DNRC staff. All applicants must hold or be able to acquire all necessary lands other than public lands and interests in the lands and water rights necessary for the construction, operation, and maintenance of the project.

Criteria for evaluating private grants are similar to the criteria outlined in Chapter II for public grants. As with public grants, private grants are also evaluated to determine the potential adverse environmental impacts. Projects that would result in significant impacts would not be recommended for funding until an environmental assessment or an environmental impact study has been completed. Recommendations are made to minimize impacts and to ensure that appropriate steps are taken to protect the environment. Any potable water system project must be approved by DEQ to ensure that it meets State standards.

## Grant Funding Recommendations

According to the Montana Constitution, the Legislature may not appropriate funds to private individuals. However, State entities have the authority to distribute public funds to private individuals. To provide for private grants in 1993, the Legislature appropriated \$100,000 to DNRC to fund grants for private entities. Since 1993, with the exception of the 2003 session, the Legislature has appropriated \$100,000 to DNRC each biennium to fund grants to private entities.

DNRC reviews and screens grant requests to determine whether the proposed projects are technically and financially feasible. DNRC will evaluate MRWS, Dam Safety, and Water Management recommendations based on criteria outlined in statute; within funding constraints the highest ranked projects will be recommended to the DNRC director for funding. DNRC will not recommend feasibility studies, research, and/or public information projects for funding. By law, grant funding for any project may not exceed 25% of the total estimated cost of the project.

## Grant Project Management

After the director has acted on the funding recommendations prepared by staff, DNRC notifies the applicants of their funded or not-funded status. DNRC does not reimburse any project cost incurred before a formal funding agreement is executed.

## Grant Project Monitoring

The project grant contract agreement between DNRC and the project sponsor includes monitoring procedures to ensure that the project meets the program intent. The equivalent of one full-time staff administers active private grants and all private loans. MRWS has agreed to provide technical support to private grant projects during design and construction phases. Budget and staffing constraints preclude site involvement by DNRC at all projects.

Project sponsors must: (1) pay all project costs, (2) submit a claim and obtain a reimbursement of allowable costs from DNRC, or (3) arrange for an advance of funds. Invoices may be submitted monthly, and all costs must be supported by invoices, receipts, or both.

## Grant Project Evaluation

Grant agreements require expenditure reports and a final report. During the contract term, the project sponsor must submit quarterly reports to DNRC. These reports must reflect the percentage of the project completed, project costs to date, any problems encountered, and the need for any amendment to the grant contract. In response to changes in project scope of work, time line, or budget, amendments to grant agreement may be prepared and issued. Amendments will continue to be the technique used to modify projects to adjust for changes in scope, budget, or timeliness. DNRC approved 13 private grants, totaling \$26,470, during 2009 and 2010 (Figure 7).

**FIGURE 7 Private Grant Applications During 2009 and 2010**

PROJECT SPONSOR	AMOUNT	PROJECT SPONSOR	AMOUNT
Big Creek Lakes Res Assoc	\$ 5,000.00	Judy Adams	\$ 640.00
Upper Musselshell WUA	2,375.00	Pipestone WUA	2,500.00
Upper Musselshell WUA	2,095.00	Pipestone WUA	2,455.00
Deadmans Basin WUA	2,500.00	Monte Smith	2,500.00
Deadmans Basin WUA	2,500.00		
Frank Farm Partnership	760.00		
Frank Farm Partnership	760.00		
Steven Streck	825.00		
Teton Co-op Reservoir	1,560.00		
		<b>TOTAL</b>	<b>\$25,710.00</b>



## **Private Loan Application and Project Review Procedures**

Loan funding became available in 1981 when the Legislature earmarked \$350,000 under the former Renewable Resource Development program to finance loans to private individuals. At the same time, DNRC was given the authority to issue general obligation bonds to finance private loans. Loans to private individuals must promote and advance the beneficial use of water and allow Montana citizens to fully use State waters.

### **Loan Project Solicitation**

DNRC solicits applications for loan fund through staff presentations at various industry functions, press releases, public meetings, and word of mouth. Irrigation equipment dealers, NRCS offices and the conservation districts also promote the program.

### **Loan Application Review**

Loan applications may be submitted at any time. DNRC staff reviews the application for completeness and requests additional information when needed. Technical aspects of the project are usually completed by NRCS or a private engineer. If the project is not designed by a qualified professional, DNRC will closely review the project design and specifications. Financial review is completed by DNRC and includes an evaluation of the applicant's financial strengths, weaknesses, and risk-taking capacity. The review also includes an evaluation of the security offered and a determination of the relative security position DNRC will have. All of these factors are considered in the recommendation to the loan committee.

### **Loan Funding Recommendations**

Projects must be technically and economically feasible, and must pay for themselves over the life of the installation through water savings, increased crop production, or other measurable benefits. Applications that meet feasibility and eligibility criteria are funded if the applicant demonstrates the ability to repay the loan.

The maximum loan amount allowable for private individuals under the RRGL is \$400,000. The 1997 Legislature amended the statute to allow DNRC to accept applications and loan funds to water user associations. These loans are limited to \$3,000,000 rather than the \$400,000 for private individuals. Loans are for a term not longer than either 30 years or the estimated useful life of the equipment purchased or materials installed. For new irrigation equipment, the allowable term is 15 years; for used irrigation equipment, the term usually is 10 years or shorter.

### **Availability of Loan Funds**

DNRC has the authority to issue up to \$30 million in general obligation Renewable Resource bonds to finance private loans. Changes made by the 1995 Legislature allow DNRC to have up to \$30 million of general obligation Renewable Resource bonds outstanding. To finance loans, DNRC sells bonds on the open market. Since the program's inception, bonds totaling about \$47 million have been issued to finance private loans. Presently, \$21.3 million in bonds are outstanding.

### **Interest Rates**

The rate of interest on the State's general obligation bond determines the interest rate for private loans. The basic rate for private loans has varied from 4.03% to 9.5 %.

Tax law affects the interest rate. Before 1986, State bonds sold to finance DNRC projects were tax-exempt. The tax law of 1986 prohibited the use of tax-free bonds to finance private ventures. Although bond sales to finance private projects are now subject to federal tax, they remain exempt from Montana

State tax. Because investors demand a higher interest rate on investments when their investments are subject to federal income tax, sale of these taxable bonds resulted in higher interest rates than those of the earlier, tax-exempt bonds.

In addition to interest costs, borrowers also pay a share of bond issuance costs proportionate to the percentage of the bond used to finance their loans. Closing costs include a \$150 non-refundable application fee and title insurance. Higher interest rates and issuance cost charges have made private loans less attractive than those offered when the program first started. Although less attractive, private loans remain competitive with conventional financing because the rate on taxable bonds is still slightly lower than interest rates obtainable from conventional financing. DNRC loans also provide financing at a fixed interest rate for a period longer than that available to borrowers through their local financial institutions.

Longer terms and competitive fixed interest rates, in most cases, continue to make these loans attractive to borrowers interested in long-term financing for major equipment or system purchases. Small loans, those less than \$10,000 are the exception. For small loans, closing costs will outweigh the benefit of DNRC's lower interest rate. DNRC recommends that projects needing less than \$10,000 seek funding from other sources.

### **Loan Project Management**

Borrowers must acquire all property rights necessary for the project, including rights-of-way and interest in land needed for the construction, operation, and maintenance of the project. Title insurance, a title opinion or other documents showing the ownership of the land, mortgages, encumbrances, or other liens must be provided to DNRC.

Loans must be secured with real property valued higher than the loan amount requested. According to statute, security equal to at least 125 % of the loan value is required. Loans may be secured with a first or second real estate mortgage, an assignment of accounts receivable, certificates of deposit, or similar securities, or other security as accepted by DNRC. To adequately secure the state's interest, DNRC requires a security equal in value to at least 150% of the loan. For example, a loan application for \$100,000 would require real estate security of \$150,000. DNRC will accept a second mortgage on property if the state's interest can be adequately secured. DNRC may require an appraisal of real property used for securing a loan. Cost of the appraisal must be paid by the applicant.

After an application is approved for financing, interim financing may be secured by the applicant, with interest costs included in the DNRC loan financing. The RRGL does not refinance existing loans; only new ventures are eligible.

Loans to private entities are disbursed by warrants drawn by the state auditor or wire transfers authorized by the state treasurer. Before disbursement can occur, all loan documents must be properly signed, security documents must be filed with the county clerk and recorder, the final title insurance policy must be in force, and an invoice must be submitted by the borrower to document the use of funds.

### **Loan Project Monitoring**

Project construction is monitored by NRCS, if the project includes a federal cost-share, and by the borrower because he has a vested interest in the successful completion of the project. Dam Safety Bureau staff monitor project construction through field visits, when possible.

Borrowers must maintain proper and adequate records of accounts that show the complete and correct entries of all receipts, disbursements, and other transactions related to the project. If applicable, borrowers must document the monthly gross revenue derived from project operations. Any segregation and application of the gross revenue resolution also must be shown in such reasonable detail, as may be determined by the borrower in accordance with generally accepted accounting practices and principles.

## Loan Project Evaluation

DNRC conducts ongoing monitoring to evaluate the projects funded under the RRGL. DNRC will continue to review each final report. This review will document whether the project successfully completed the objectives outlined in the original application and as specified in the loan agreement.

### Private Loan Projects Previously Funded

As of July 1, 2010, 484 private loans had been approved under the RRGL. A total of \$45,183,323.00 has been advanced, and \$741,874 has been committed to projects that have not yet requested disbursements. DNRC approved 31 private loans in FY 2009 and 19 private loans in FY 2010 (Figure 8.). Loans have been used to finance new and refurbished irrigation systems, riprap, irrigation wells, and refurbished private drinking water systems.

**FIGURE 8 Private Loan Applications Approved Since FY 2009 and 2010**

Contract Number	Loan Amount		Contract Number	Loan Amount
WDL-09-3570	\$ 170,605		WDL-09-3601	\$ 334,622
WDL-09-3570	79,395		WDL-10-3602	74,440
WDL-09-3571	3,460		WDL-10-3603	89,905
WDL-09-3571	93,330		WDL-10-3604	49,580
WDL-09-3573	119,100		WDL-10-3607	86,566
WDL-09-3574	210,000		WDL-10-3610	70,000
WDL-09-3575	145,650		WDL-10-3611	107,000
WDL-09-3577	57,560		WDL-10-3612	172,600
WDL-09-3578	244,800		WDL-10-3613	180,400
WDL-09-3579	268,000		WDL-10-3615	57,000
WDL-09-3580	104,000		WDL-10-3616	87,700
WDL-09-3581	171,590		WDL-10-3617	77,550
WDL-09-3582	300,000		WDL-10-3618	108,238
WDL-09-3583	93,470		WDL-10-3619	100,000
WDL-09-3584	74,000		WDL-10-3620	120,000
WDL-09-3585	80,000		WDL-10-3621	34,245
WDL-09-3587	76,850		WDL-10-3622	122,110
WDL-09-3588	78,615		WDL-10-3623	160,000
WDL-09-3589	70,000		WDL-10-3624	42,000
WDL-09-3590	225,000		WDL-10-3625	41,000
WDL-09-3591	93,000			
WDL-09-3592	2,705			
WDL-09-3592	282,795			
WDL-09-3593	370,000			
WDL-09-3594	120,000			
WDL-09-3595	30,000			
WDL-09-3596	35,975			
WDL-09-3598	79,500			
WDL-09-3599	100,000			
WDL-09-3600	110,000			
			<b>Total</b>	<b>\$6,004,356</b>





## **CHAPTER V**

### **Irrigation Development Grants**

#### **Background**

The Irrigation Development Program was initiated by the 1999 Legislature to foster development of new irrigation projects and production of high-value crops such as potatoes and sugar beets. Program staff provide financial, technical and legal assistance to government and private entities. The program also works with numerous irrigation districts and associations to address current issues and training needs. This work includes assistance on dealing with the numerous aging infrastructure issues in irrigation throughout the state.

Grants, typically ranging from \$2,000 to \$15,000 per project, are available through this program. Project examples include installing test wells for irrigation, conducting feasibility studies on irrigation system improvements or new irrigation projects, and providing information to the public, such as agriculture tours to educate producers on new technology.

The Irrigation Development Program is now in its tenth year. The program has assisted producers and irrigators to develop over 38,000 acres of new irrigation. Projects funded by this program have played an important role in improving the management and conservation of over 220,000 acres of existing irrigation so that more water is available for all uses.

In Eastern Montana, the Irrigation Development Program assisted in increasing the acres used for malting barley, dairy feed and potatoes. The program has also been very closely involved with the Fort Peck Tribes in their efforts to implement the proposed Fort Kipp Irrigation Project. This 2,200 acre project, which the Tribes expect to start building in spring 2011, will be a blue print for how the Tribes will build many new irrigation projects along the Missouri River over the next several decades. Efforts have also begun to assist the Dry Fork Farms of the Chippewa Cree Tribe to finish developing an additional 1400 acres and pipeline on the Rocky Boy's Reservation.

#### **Project Solicitation and Review**

To request funds, applicants are required to submit an application that describes the project, identifies the sources and uses of funding, and discusses the implementation schedule for the study.

All submitted applications are evaluated for completeness and compliance with the intended purposes of the program. Requests for irrigation development grants funds are reviewed by DNRC staff and funded, if appropriate, on a first come basis. There is more demand than there is available funding every year.

Irrigation Development Grants Awarded in FY 2010		
Project Sponsor	Project	Amount
Daly Ditches	Flow tracker	\$ 8,155
Daly Ditches	GIS application	15,000
Bitterroot Irrigation District	Flow tracker	8,155
Billings Bench Water Association	Flow tracker/Pam Sealant	15,000
Helena Valley Irrigation District	GIS enhancement	13,500
Pondera County Canal & Reservoir	GIS enhancement	13,700
Delphia Melstone	Flow tracker	8,155
Greg Labatte	Test well	5,000
Lockwood Irrigation District	Infrastructure mapping	10,000
West Crane	Test wells	5,000
Fort Shaw Irrigation District	GIS funding	2,000
Hysham Irrigation District	GIS funding	7,000
Two Leggins Water Users Association	Canal operation training	2,000
Mike Christoffersen	Test well	7,500
Fort Peck Tribes	Feasibility study	20,000
Tiffin Tracts	Feasibility study	10,000
Chad Cromwell	Test well	7,500
Pondera County Canal & Reservoir	Website	4,000
Central MT RC&D	Inventory database	18,000
West Crane	Beneficial water use permits	7,000
Sweet Grass County CD	Reconnaissance assessment	6,250
Deadman's Basin Water Users	Flow meter	14,353
Upper Musselshell Water Users	Flow meter	13,673
Fort Peck Assiniboine	Easement	10,000
Dry Fork Farms	Irrigation master plan	10,000
	<b>Total</b>	<b>\$240,941</b>

Irrigation Development Grants Awarded in FY 2011 To Date		
Project Sponsor	Project	
Richland County CD	Groundwater development	\$ 7,000
Fort Peck Tribes	Technical assistance	5,000
	<b>Total</b>	<b>\$ 12,000</b>



## **CHAPTER VI**

### **Emergency Grants and Loans**

#### **Application Administration and Project Review Procedures**

In addition to the regular funding available during each RRGL funding cycle, limited funds are also available for immediate projects necessary to address qualified emergencies. These funds are reserved to help finance emergency projects, which otherwise would be eligible for grant or loan funding, and, if delayed until legislative approval during the next funding cycle, would result in substantial damages or legal liability for the project sponsor.

DNRC accepts applications for emergency grants and loans from public entities when an emergency occurs. No application fee is required.

#### **Project Solicitation**

No formal solicitation for applications is conducted. Public entities, engineering firms, and other consultants likely to be involved with eligible emergency projects have been informed that emergency funds exist. During presentations to provide information relative to public grant and loan programs, the availability of emergency funding is also discussed.

To request funds, applicants are required to submit a letter containing:

- A description of the problem;
- A statement of when the problem occurred;
- The proposed solution;
- Cost estimates, with documentation; and,
- Documentation of the community's financial condition and ability to otherwise pay for the proposed repairs

#### **Application Review**

As with funding for other renewable resource projects, emergency funds must be used for projects that manage renewable resources in the state through conservation, management, development or preservation; for assessing feasibility or planning; for implementing renewable resource projects; or for similar purposes approved by the legislature. All applications submitted are evaluated for completeness. Sponsors for those applications needing more documentation are notified and asked to submit additional material immediately.

Requests for emergency funds are reviewed by DNRC staff. A DNRC engineer investigates the problem to determine feasible alternatives. The project is evaluated to determine its eligibility for funding under the RRGL. Projects must meet the statutory requirements of 85-1-605 (4), MCA, as a minimum, to merit further consideration. Engineers and technical experts from other state agencies may be solicited for technical opinions, guidance, and information.

#### **Funding Recommendations**

As discussed in Chapter I, the statute allows DNRC to request up to 10% of the grant funds available each biennium to fund emergency projects. DNRC typically requests \$100,000 for emergency grants and will again request the 2011 Legislature to authorize \$100,000 to fund emergency grants for the next biennium.

Funding recommendations are made on a case-by-case basis and within the constraint of available funding. As information is gathered and documented, a staff report with funding recommendations is written and presented to the CARDD's administrator and DNRC director for an official decision as to

whether the project should receive emergency grant or loan funding. Typically, a grant for an individual emergency project is limited to a maximum of \$30,000. The limited total amount of funding available each biennium dictates close management of funding limits for each emergency project.

### **Project Management**

Based on the DNRC director's decision, the sponsor is notified of the status of its emergency grant or loan request. If successful, the applicant and DNRC enter into a formal agreement and the project is managed in the same manner as other grant and loan projects funded by the RRGL.

### **Emergency Grant and Loan Applications in Fiscal Years 2010 and 2011**

Each emergency grant request submitted during fiscal year 2010 and fiscal year 2011 to date was reviewed by DNRC staff and, based on staff recommendation, was approved or denied for funding by the DNRC director. Total funding for all emergency grants may not exceed the biennial appropriation for emergency projects under the RRGL. No emergency grant may be funded in excess of the biennial appropriation, less the total of all emergency grants funded previously during the biennium. The amount available for emergency loans is \$10,000,000 per biennium.

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### **Authorized Projects**

In 2009, the Legislature authorized \$100,000 for emergency grants. During the 2011 biennium to date, the following emergency projects have been funded:

<b>Bitter Root Irrigation District</b>	<b>\$15,000</b>
<b>Lost Horse Feeder Canal Emergency Repair Project</b>	
<b>June 2009</b>	

In April 2009, approximately 60-feet of dike along the Lost Horse Canal failed, causing substantial damage and necessitating immediate repairs at a cost of about \$55,000. A \$20,000 RRGL emergency grant was awarded, with the rest of the funding coming from O&M reserves. \$5,000 of the grant was from the 2007 appropriation, with the remainder from the 2009 appropriation.

<b>Chippewa Cree Tribe</b>	<b>\$15,000</b>
<b>Emergency Bottled Water</b>	
<b>July 2010</b>	

In June 2010, excessive rain caused flooding and the failure of the water system on the Rocky Boy's Reservation. While the system was being restored, it was necessary for the Tribe to provide bottled water to affected households. The water was provided by the Federal Emergency Management Agency on a 75% to 25% cost share basis. This grant represents 50% of the Tribe's matching share.

<b>Fort Shaw Irrigation District</b>	<b>\$ 5,000</b>
<b>Emergency Siphon Repair Project</b>	
<b>December 2009</b>	

In July 2009, an approximately 7-foot diameter concrete and steel siphon failed and the associated canal was shut down. Two local contractors were hired to repair the siphon and the system was placed back into operation four days later. The total cost of the repair was about \$12,000. A \$5,000 RRGL emergency grant was awarded in December to replace a portion of the O&M reserves used to fund the emergency project.

## **CHAPTER VII**

### **Summary of Grants to Public Entities, October 2008-September 2010**

The status of all projects authorized October 2008 through September 2010 is reported here. Project status is reported in one of four categories: Completed, Active, Authorized but not executed, and Terminated.

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#### **Grant Projects Completed Since October 1, 2008**

##### **Bainville, Town of Wastewater System Improvements RRG-08-1310**

The 2007 Legislature authorized a \$100,000 grant for wastewater improvements to the Town of Bainville. The system improvements included a new, three-celled lined facultative lagoon, and replacement of approximately 2,000 linear feet of sewage collection main. A grant agreement was executed in April 2008. Additional funding for the project was obtained, and construction took place in 2009. The project is complete and has been closed out. All grant funds have been disbursed.

##### **Beaverhead Conservation District Big Hole Spring Creek Kalsta Spring Creek Water Quality Enhancement RRG-10-1419**

The 2009 Legislature authorized a \$97,485 grant for water quality improvements and creation of fisheries habitat on the Big Hole River. The project is complete and has been closed out. All grant funds have been disbursed.

##### **Big Horn County Conservation District Alluvial Aquifers in Northern Big Horn County RRG-06-1272**

The 2005 Legislature authorized a \$100,000 grant for the assessment of alluvial aquifers in northern Big Horn County. The project was completed in 2008 and has been closed out. All grant funds have been disbursed.

##### **Bitter Root Irrigation District Siphon 1-Phase 1 Replacement Project RRG-10-1391**

The 2009 Legislature authorized a \$100,000 grant for partial replacement of Siphon 1, a major structure that conveys the district's entire water allocation across the Bitterroot Valley. Designated phase 1, the project consisted of a new inlet structure and the replacement of about 1,000 lineal feet of large diameter steel pipe. The project is complete and has been closed out. All grant funds have been disbursed.

##### **Black Eagle Water and Sewer District Water System Improvements RRG-08-1335**

The 2007 Legislature authorized a \$100,000 grant to design and replace cast iron water mains, replace fire hydrants and valves, and replace all nonstandard water service lines to the property on these mains on Smelter Avenue in Black Eagle. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.



**Bozeman, City of**  
**Hyalite Creek Source Water Protection Barrier Project**  
**RRG-10-1380**

The 2009 Legislature authorized a \$100,000 grant to place guard rail along Hyalite Canyon Road to prevent accidental entry of vehicles into Hyalite Creek and spilling oil into the water. The project was completed in 2010 and has been closed out. All grant funds have been disbursed.

**Buffalo Rapids Irrigation District 1**  
**Open Lateral 3.2 Conversion to Pipeline**  
**RRG-08-1352**

The 2007 Legislature authorized a \$100,000 grant to replace an open ditch with a pipeline. The project was completed in 2010 and has been closed out. All grant funds have been disbursed.

**Buffalo Rapids Irrigation District 2**  
**Canal Automation**  
**RRG-06-1251**

The 2005 Legislature authorized a \$88,955 grant to design and construct a canal automation system that maintains water levels in the system. The project was completed in 2010 and has been closed out. All grant funds have been disbursed.

**Buffalo Rapids Irrigation District 2**  
**Open Lateral 34.5 Conversion to Pipeline**  
**RRG-08-1323**

The 2007 Legislature authorized a \$100,000 grant to replace a canal with a pipeline. The project was completed in 2010 and has been closed out. All grant funds have been disbursed.

**Bynum Teton County Water and Sewer District**  
**A New Source of Drinking Water for Bynum, Phase 1**  
**RRG-08-1295**

The 2007 Legislature authorized a \$100,000 grant to find water for the community of Bynum. The community contracted with the MBMG to identify test drill sites; to drill test wells, and, to report the findings from the test well drilling. Three test wells were drilled. None of the three wells had sufficient water quality or quantity. The remaining money in the grant was spent on preliminary engineering for a different well site. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**Carter-Chouteau County Water and Sewer District**  
**Water System Improvements**  
**RRG-06-1245**

The 2005 Legislature authorized a \$100,000 grant for water system improvements in the community of Carter. Specifically, the WSD designed and constructed water distribution system improvements, water source improvements, and purchased and installed water meters and arsenic treatment point of use devices on each service connection. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**Custer Area-Yellowstone County Water and Sewer District**  
**Wastewater System Improvements Project**  
**RRG-06-1264**

The 2005 Legislature authorized a \$100,000 grant for wastewater system upgrades. The upgrades included a collection system replacement, a new lift station, and lagoon system reconstruction. The project is complete and has been closed out. All grant funds have been disbursed.

**East Bench Irrigation District  
East Bench Irrigation District Canal Lining  
RRG-08-1328**

The 2007 Legislature authorized a \$100,000 grant to line a portion of the main canal with 'pond guard' liner to reduce seepage loss. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**East Bench Irrigation District  
East Bench Irrigation District Sweetwater Seepage Area Canal Lining  
RRG-10-1420**

The 2009 Legislature authorized a \$100,000 grant for lining 2,000 feet of irrigation canal. The project is complete and has been closed out. All grant funds have been disbursed.

**Ekalaka, Town of  
Water and Wastewater System Improvements Project  
RRG-08-1314**

The 2007 Legislature authorized a \$100,000 grant to Ekalaka to improve both its drinking water and wastewater systems. The project is complete and has been closed out. All grant funds have been disbursed.

**Fergus Conservation District  
Carter Pond Dam Rehabilitation Project  
RRG-08-1326**

The 2007 Legislature authorized a \$100,000 grant to help fund the rehabilitation of the Upper Carter Pond and Lower Carter Pond Dams north of Lewistown. The project consisted of the installation of new outlet works and major structural reconstruction on each of two earth fill dams. The project is complete and has been closed out. All grant funds have been disbursed.

**Fort Peck Tribes  
58 Main Replacement for Water Management  
RRG-08-1327**

The 2007 Legislature authorized a \$100,000 grant to remove a failing irrigation canal check structure and replace it with a Langeman gate. A grant agreement was executed in October 2007. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**Fort Shaw Irrigation District  
Water Quality and Quantity Improvements –Phase 3  
RRG-04-1213**

A grant was authorized by the 2003 Legislature. A grant agreement was executed in October 2003 to replace farm turnouts and lateral ditch control valves, to line 3,500 feet of canal, to replace the K-Ditch headworks and to replace 1,200 feet of canal with pipeline. The project was completed 2008 and has been closed out. All grant funds have been disbursed.

**Goodan-Keil County Water District  
Water Improvement Project  
RRG-08-1318**

The 2007 Legislature authorized a \$100,000 grant to the Goodan-Keil Water District to construct a new concrete storage tank; convert the booster pump station to three-phase power; replace old well field and transmission piping; and, install seven new fire hydrants and new water meters. Construction began in late summer 2008. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**Helena Valley Irrigation District  
Irrigation System Improvements  
RRG-10-1493**

The 2009 Legislature authorized a \$100,000 grant to the Helena Valley Irrigation District for design and construction of canal lining on the Main Canal. The project was completed in 2010 and has been closed out. All grant funds have been disbursed.

**Jordan, Town of  
Wastewater System Improvements  
RRG-08-1302**

The 2007 Legislature authorized a \$100,000 grant to Jordan for wastewater system improvements. This project included design and construction of a three-cell facultative lagoon system, construction of a lift station with submersible pumps, construction of a new control building, and replacement of 1,500 lineal feet of collection pipe. The project was bid in summer 2008 and construction began in the fall. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**Judith Basin County  
Geyser Water System Improvements  
RRG-04-1195**

The 2003 Legislature authorized a \$100,000 grant to drill a new well for the community of Geyser. This well was delayed because it did not initially produce the amount of water expected or needed. The district worked with the Bureau of Reclamation and obtained funding to perform some rehabilitation on the well. This work took almost a year. The first well has been air fractured and now produces the water expected. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**Lewis and Clark Conservation District  
Florence Canal Rehabilitation Project  
RRG-06-1275**

The 2005 Legislature authorized a \$100,000 grant for rehabilitation of the Florence Canal. Repair of the flume has been completed and initial ditch lining has been completed. When the ditch work was done, it was apparent to the engineer that many of the culverts initially slated for replacement did not need to be replaced. The contract was amended and the conservation district used the money budgeted for culvert replacement for more ditch lining. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**Lewis and Clark County  
Lewis and Clark Fairgrounds, Dunbar Area Water System Improvements  
RRG-08-1299**

The 2007 Legislature authorized a \$100,000 grant for water system improvements to the Lewis and Clark Fairgrounds/Dunbar area in Lewis and Clark County. The project was completed in 2008 and has been closed out. All grant funds have been disbursed.

**Livingston, City of  
Glass Pulverizer Purchase and Installation Project  
RRG-08-1337**

The 2007 Legislature authorized a \$100,000 grant to purchase and install a glass pulverizer. The pulverizer is now being used to process glass, previously disposed of in the landfill, into small pieces that are usable as a gravel substitute for road construction, pipe bedding, and other applications. The project is complete and has been closed out. All grant funds have been disbursed.



**Livingston, City of**  
**Livingston Flood Damage Reduction Study**  
**RRG-06-1265**

The 2005 Legislature authorized a \$100,000 grant for a flood damage reduction feasibility study. The city contracted with the USACE to complete the study. The study was delayed because of lack of USACE matching funds. The city requested an amendment to the original contract in summer 2008. The city hired a consultant to review what USACE had completed to that point. The city then requested that the grant money be spent on a consultant to complete the feasibility study that USACE started and to provide a recommended alternative to the city. The project was completed in 2008 and has been closed out. All grant funds have been disbursed.

**Lower Musselshell Conservation District**  
**Lost Horse Creek Siphon**  
**RRG-10-1429**

The 2009 Legislature authorized a \$100,000 grant to replace a portion of the Lost Horse Creek Siphon. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**Lower Yellowstone Irrigation Project**  
**Canal Control Project**  
**RRG-06-1278**

The 2005 Legislature authorized a \$100,000 grant to install automatic check structures in the main canal. The project was completed and closed out in May 2010. All grant funds have been disbursed.

**Manhattan, Town of**  
**Water System Improvements**  
**RRG-10-1425**

The 2009 Legislature authorized a \$100,000 grant for water system improvements including: the replacement of asbestos cement water main with a PVC main along a new alignment under the South Manhattan Road Interstate underpass. The project was completed in 2010 and has been closed out. All grant funds have been disbursed.

**Milk River Irrigation Project Joint Board of Control**  
**Saint Mary Canal, Drop 3 Plunge Pool Concrete Repair**  
**RRG-08-1363**

The 2007 Legislature authorized a \$100,000 grant to the Milk River Joint Board of Control to repair the St. Mary's canal drop structure 3. The USBR completed the design and data collection portion of the project and was responsible for construction bids. The project included installation of a new chute terminal wall and repair of the training walls, wing walls, and floor. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**Mill Creek Irrigation District**  
**Mill Lake Dam Rehabilitation Project**  
**RRG-04-1204**

The 2003 Legislature authorized a \$100,000 grant for the construction of spillway and outlet works improvements and seepage abatement for Mill Lake Dam, a high hazard dam located in the Bitterroot-Selway Wilderness Area west of Hamilton. Preliminary and final engineering was completed in 2005 and a portion of the work was completed that year. Outlet works improvements were made in 2007. Sealing of the upstream face of the dam and spillway improvements were completed in 2009. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**Missoula, City of  
Rattlesnake Neighborhood Sewer Collection System  
RRG-04-1206**

The 2003 Legislature authorized a \$100,000 grant for the design and construction of a wastewater collection system to complete centralized sewer service in the lower Rattlesnake area of Missoula. The project became the focus of citizen protests and legal action against the city, prompted by the alleged failure of the city to allow public participation during the planning and environmental review stages of the project. Although the project was delayed, it is being constructed in phases and the lawsuit has been dismissed. Phases that were funded by the grant have been completed. The project is complete and has been closed out. All grant funds have been disbursed.

**Missoula County  
Grant Creek Restoration and Flood Mitigation  
RRG-08-1304**

The 2005 Legislature authorized a \$100,000 grant to reduce surface and groundwater flood problems, improve fish passage and habitat, and improve recreational opportunities in Grant Creek. This grant was contracted specifically to address construction of an inlet structure, installation of the bypass pipeline, construction of a discharge structure, and restoration of the site. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**Missoula County – Lolo RSID  
Missoula County UV System  
RRG-08-1348**

The 2007 Legislature authorized a \$100,000 grant to upgrade facilities of the Missoula County wastewater system by adding an open channel ultra-violet disinfection system. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**Montana Department of Natural Resources and Conservation  
Ackley Lake Dam Rehabilitation Project  
RRG-08-1322**

The 2007 Legislature authorized a \$100,000 grant for the construction of improvements to the outlet works, spillway, and drains for Ackley Lake Dam southwest of Hobson. The project bid late summer 2008 and is now complete. The project is complete and has been closed out. All grant funds have been disbursed.

**Montana Department of Natural Resources and Conservation  
Deadman's Basin Terminal Outlet Replacement Project  
RRG-10-1394**

The 2009 Legislature authorized a \$100,000 grant for outlet works improvements to Deadman's Basin Dam. The project was completed in 2010 and has been closed out. All grant funds have been disbursed.

**Montana Department of Natural Resources and Conservation  
East Fork Siphon Replacement Project  
RRG-08-1307**

The 2007 Legislature authorized a \$100,000 grant for the replacement of a buried siphon downstream from East Fork Dam in Granite County. The project is complete and has been closed out. All grant funds have been disbursed.

**Montana Department of Natural Resources and Conservation  
Frenchman Dam Rehabilitation Study  
RRG-06-1248**

The 2005 Legislature authorized a \$100,000 grant for a study on rehabilitation of Frenchman Dam. The project entailed a background data review, geotechnical investigation, flood hydrology study, analysis of firm annual yield, and evaluation and development of various spillway designs. The project is complete and has been closed out. All grant funds have been disbursed.

**Montana Department of Natural Resources and Conservation  
Middle Creek Dam Early Detection and Warning System  
RRG-08-1319**

The 2007 Legislature authorized a \$100,000 grant to design and install a remote early detection and warning system for Middle Creek Dam, an earth fill high-hazard dam approximately 15 miles south of Bozeman on Hyalite Creek. The project is complete and has been closed out. All grant funds have been disbursed.

**Montana Department of Natural Resources and Conservation  
Smith Creek Canal Rehabilitation Project  
RRG-08-1338**

The 2007 Legislature authorized a \$100,000 grant for the reshaping and lining of portions of the Smith Creek Canal, one of two feeder canals to Nylan Reservoir west of Augusta. The project is complete and has been closed out. All grant funds have been disbursed.

**Montana State University  
Channel Response Assessment Upper Blackfoot River  
RRG-08-1296**

The 2007 Legislature authorized a \$100,000 grant to study the response of stream channels and floodplain for the Upper Blackfoot River to Mike Horse Dam rehabilitation activities. The project is complete and has been closed out. All grant funds have been disbursed.

**Montana State University  
Four Corners Surface and Groundwater Study  
RRG-06-1242**

The 2005 Legislature authorized a \$99,618 grant to collect hydraulic data necessary to numerically model groundwater-surface water interaction in the Four Corners area and to establish monitoring which can be used to assess the response of groundwater to precipitation, irrigation, and river stage. The project was completed in 2008 and has been closed out. All grant funds have been disbursed.

**North Valley County Water and Sewer District  
Water System Improvements  
RRG-08-1361**

The 2007 Legislature authorized a \$100,000 grant to the North Valley WSD for water system improvements. DNRC asked the district to consider hooking into the North Central Regional Water System as rural customers. This alternative was not considered in the original preliminary engineering report. The community chose to move forward with the project as originally proposed. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**Petrolia Irrigation District  
Canal Lining Project  
RRG-08-1301**

The 2007 Legislature authorized a \$100,000 grant to line portions of its canal system. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**Polson, City of  
Water System Improvements  
RRG-09-1368**

The 2007 Legislature authorized a \$100,000 grant for water system improvements. The project included; design and construction of the new tanks including controls, valves fittings, telemetry system, and site fencing. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.



**Ramsay County Water and Sewer District  
Water System Improvements  
RRG-04-1203**

The 2003 Legislature authorized a \$100,000 grant for the design and construction of a water distribution system, new hydrants and valves, new wells, and installation of water meters on all service connections and source supplies. The project was delayed because of two failed debt elections. The third debt election passed and the project progressed. It was completed in fall 2008, but problems with the contractor delayed project closeout until June 2010. The project is complete and has been closed out. All grant funds have been disbursed.

**Ranch County Water and Sewer District  
Water System Improvements Project  
RRG-06-1270**

The 2005 Legislature authorized a \$100,000 grant for water system improvements including; a new well, a 150,000 water storage reservoir, a booster pump and chlorination facility, and distribution system replacement. The project is complete and has been closed out. All grant funds have been disbursed.

**Red Lodge, City of  
Water System Improvements Project  
RRG-08-1294**

The 2007 Legislature authorized a \$100,000 grant for the construction of water system improvements consisting of distribution line replacement and the construction of a storage reservoir. The project is complete and has been closed out. All grant funds have been disbursed.

**Shelby, City of  
Water System Improvements Project  
RRG-08-1336**

The 2007 Legislature authorized a \$100,000 grant for replacement of existing under-sized water mains with twelve-inch mains, more efficient looping within the water distribution system with eight-inch tie-in mains, and installation of impervious surfaces around the upper terminus of two existing water supply wells which were at risk from potential surface run-off. The project was completed in 2008 and has been closed out. All grant funds have been disbursed.

**Sheridan County  
Raymond Dam Rehabilitation  
RRG-08-1315**

The 2007 Legislature authorized a \$100,000 grant for the rehabilitation of the Raymond Dam for recreational and fish and wildlife benefits. The project is complete and has been closed out. All grant funds have been disbursed.

**Sidney Water Users Irrigation District  
Increasing Irrigation Efficiency  
RRG-05-1238**

The 2003 Legislature authorized a \$100,000 grant for the replacement of an earth canal with pipe. The project was completed in 2009 and has been closed out. All grant funds have been disbursed.

**Sidney Water Users Irrigation District  
Increasing Irrigation Efficiency Phase 2  
RRG-08-1351**

The 2007 Legislature authorized a \$100,000 grant for the replacement a portion of main canal with pipeline. The project was completed in 2010 and has been closed out. All grant funds have been disbursed.

**St. Ignatius, Town of**  
**Wastewater System Improvements Project**  
**RRG-06-1256**

The 2005 Legislature authorized a grant for the construction of a new wastewater treatment lagoon and effluent disposal system. The project is complete and has been closed out. All grant funds have been disbursed.

**Stanford, Town of**  
**Water System Improvements**  
**RRG-04-1194**

The 2003 Legislature authorized a \$100,000 grant to design and construct two new wells and rehabilitate the wells currently in service. The project also includes design and construction of a new elevated steel tank and water distribution system. This project was completed and closed out in August 2009. Stanford reverted \$5,218.50 of grant funds.

**Sunny Meadows County Water and Sewer District**  
**Water System Improvements Project**  
**RRG-08-1339**

The 2007 Legislature authorized a \$100,000 grant for improvements to its existing water system. The primary components of work were a replacement water storage reservoir and the installation of water meters. The project is complete and has been closed out. All grant funds have been disbursed.

**Sweet Grass County CD**  
**Post-Kellogg Diversion Structure Infrastructure Rehabilitation Project**  
**RRG-10-1401**

The 2009 Legislature authorized a \$100,000 grant for rehabilitation efforts on the existing Post-Kellogg diversion infrastructure on the Boulder River. The project is complete and has been closed out. All grant funds have been disbursed.

**Sweet Grass Conservation District**  
**West Boulder Point of Diversion Rehabilitation Project**  
**RRG-08-1346**

The 2007 Legislature authorized a \$44,500 grant to replace a diversion structure in the West Boulder. The project was completed in 2008 and has been closed out. All grant funds have been disbursed.

**Thompson Falls, City of**  
**Thompson Falls Water System Improvements**  
**RRG-08-1329**

The 2007 Legislature authorized a \$100,000 grant for water system improvements. The project consisted of transmission line replacement and new meters. The project was completed in 2008 and has been closed out. All grant funds have been disbursed.

**Tri-County Water and Sewer District**  
**Water System Improvements Project**  
**RRG-08-1350**

The 2007 Legislature authorized a \$100,000 grant for improvements to its rural water system including; a new infiltration gallery, wet well, pump house, the replacement of 20,000 lineal feet of undersized water main, and the installation of a boost pump facility. The project is complete and has been closed out. All grant funds have been disbursed.

**Upper/Lower River Road Water and Sewer District Phase 2**  
**Water and Wastewater Systems Improvements Project**  
**RRG-06-1282**

The 2005 Legislature authorized a \$100,000 grant for the second phase of water and wastewater system improvements. The project was completed in 2008 and has been closed out. All grant funds have been disbursed.

**Virginia City, Town of  
Virginia City Wastewater System Improvements  
RRG-10-1386**

The 2009 Legislature authorized a \$100,000 grant for improvements to the town wastewater system including; replacement of sewer main, lining pipe and re-routing two failing services. The project is complete and has been closed out. All grant funds have been disbursed.

**Whitefish, City of  
Wastewater System Improvements  
RRG-08-1312**

The 2008 Legislature authorized a \$100,000 grant for wastewater system improvements. The project included construction of a new building to house an automated rotary screen; a bypass basin for use in bypassing the main lift station for needed inspection, cleaning and maintenance of the wet well; and, construction of a new flocculating clarifier. The project was bid in summer 2008. Bids came in under the engineer's estimate. The project was completed in 2010 and has been closed out. All grant funds have been disbursed.

**Yellowstone Conservation District  
Canyon Creek Restoration  
RRG-06-1277**

The 2005 Legislature authorized a \$100,000 grant for demonstration projects in stream restoration, watershed management, and weed control. Spraying was done for salt cedar and knapweed and education involving this demonstration project is ongoing. The project was completed in 2008 and has been closed out. All grant funds have been disbursed.

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**Active Grant Projects**

**Beaverhead Conservation District  
Spring Creek Restoration  
RRG-07-1292**

The 2005 Legislature authorized a \$100,000 to improve fish habitat by restoring an eroding stream bank in a tributary to the Beaverhead River. The Spring Creek Restoration Project is a partnership between the Beaverhead Conservation District, the BWC, and a private landowner. Because the location of the planned restoration area was moved to another property, the project has been delayed and is expected to be completed by December 2010.

**Beaverhead County  
Blacktail Deer Creek Flood Mitigation  
RRG-09-1370**

The 2007 Legislature authorized a \$100,000 grant for flood mitigation, replacement of two bridge culverts, and two foot bridges. The project was constructed in late winter 2009 and early spring 2010. DNRC has disbursed \$90,000 of the grant funds.

**Big Horn Conservation District  
Water Reservation Efficiencies  
RRGL-10-1392**

The 2009 Legislature authorized a \$33,706.33 grant to allow the CD to verify and determine if their water reservations were in fact completed as authorized and in compliance. The CD was concerned that many of their previously authorized water reservations were not as they were authorized and the CD eventually would be allocating water that they had already used in prior water reservations. As of July 1, 2010, the contractor was completing field work and preliminary reports are expected by August 15, 2010.



**Big Sandy, Town of  
Big Sandy Wastewater Improvements  
RRG-10-1463**

The 2009 Legislature authorized a \$100,000 grant to improve the wastewater system by constructing an additional cell in the lagoon, and installing a sprinkler irrigation system for land application of treated effluent. A grant agreement was executed in July 2010. The project is expected to be completed by December 2011.

**Bigfork County Water and Sewer District  
Wastewater System Improvements Project  
RRG-10-1456**

The 2009 Legislature authorized a \$100,000 to upgrade the wastewater treatment plant by installing a membrane bio-reactor treatment facility in parallel with the existing plant. The project has been designed and construction is scheduled to begin late in 2010. No grant funds have been disbursed.

**Brady County Water and Sewer District  
Wastewater System Improvements  
RRG-08-1297**

The 2007 Legislature authorized a \$100,000 grant for the Town of Brady to design and construct a new lagoon with spray irrigation, remove the sludge from the current lagoon, and replace the entire collection system. The project was contracted in summer 2007. Closeout of the project is expected by December 2010. DNRC has disbursed \$90,000 of the grant funds.

**Bridger Pines County Water and Sewer District  
Bridger Pines Wastewater System Improvements  
RRG-10-1454**

The 2009 Legislature authorized a \$100,000 grant for wastewater system upgrades. The project will replace a leaky treatment pond with an updated community wastewater treatment system. DNRC has disbursed \$71,144.50 of the grant funds.

**Broadview, Town of  
Broadview Water System Improvements  
RRG-10-1449**

The 2009 Legislature authorized a \$100,000 grant to construct a new water supply, new pump house, new transmission main line, and new water meters. The project is expected to be completed by December 2011.

**Buffalo Rapids Irrigation District 1  
Conversion of Lateral 2.9/7.6 to Pipeline  
RRG-10-1327**

The 2009 Legislature authorized a \$100,000 grant for an open lateral to pipeline conversion project. The project is 50% complete and bid letting for the second half of the project will occur on October 4, 2010. The district is in the process of amending the scope of work to half of the original project. This project is expected to be completed by December 31, 2010. DNRC has disbursed \$65,000 of the grant funds.

**Buffalo Rapids Irrigation District 2  
Fish Screen Shirley Pumping Plant  
RRG-10-1443**

The 2009 Legislature authorized a \$100,000 grant for the installation of a fish screen on the Shirley Pump Plant. This project is 75% complete and the anticipated completion date is June, 2011. The applicant will be applying for an extension to the contract which is set to expire December 31, 2010. DNRC has disbursed \$51,998.96 of the grant funds.

**Bynum Teton County Water and Sewer District  
Water System Improvements  
RRG-10-1424**

The 2009 Legislature authorized a \$100,000 grant to locate and develop a new water source and design and construct a new water system for the community of Bynum. The estimated completion date is December 2011. DNRC has disbursed \$11,000 of the grant funds.

**Carbon Conservation District  
Phase 1 Hydrogeology and Water Balance of the East/West Bench Aquifers  
RRG-08-1341**

The 2007 Legislature authorized a \$100,000 grant for a baseline study of the hydrogeology and water balance of the aquifers underlying the East and West Bench of Rock Creek, near Red Lodge. The project will be extended until December 2011. DNRC has disbursed \$55,540 of the grant funds.

**Cascade, Town of  
Cascade Water Systems Improvements  
RRG-10-1414**

The 2009 Legislature authorized a \$100,000 grant to improve the water system by replacing water mains and installing a standby power generator. The project is on schedule and a December 2010 completion date is expected.

**Choteau, City of  
Wastewater System Improvements Project  
RRG-10-1410**

The 2009 Legislature authorized a \$100,000 for improvements to the wastewater collection and treatment systems, including the replacement of 2,800 lineal feet of collection line; the installation of solar-powered mixers in the existing lagoon; and, the installation of an ultra-violet disinfection system. The project is underway and is scheduled for completion late in 2010. DNRC has expended \$95,000 of the grant funds.

**Clinton Irrigation District  
Main Canal Rehabilitation Project  
RRG-10-1432**

The 2009 Legislature authorized a \$96,610 grant for the Main Canal Rehabilitation Project. This canal lining project will rehabilitate 1,550 feet of canal. DNRC has disbursed \$93,879.45 of the grant funds.

**Columbia Falls, City of  
Wastewater System Improvements Project  
RRG-08-1353**

The 2007 Legislature authorized a \$100,000 grant for improvements to the wastewater treatment plant. The project is currently being constructed with completion scheduled for late 2010. DNRC has disbursed \$95,000 of the grant funds.

**Confederated Salish and Kootenai Tribe  
CSKT Upper Jocko S Lining Project  
RRG-10-1415**

The 2009 Legislature authorized a \$100,000 grant for the Upper Jocko S Lining Project. The canal will line irrigation canals to reduce seepage and increase available flows for bull trout and agriculture production. DNRC has disbursed \$95,000 of the grant funds.

**Crow Tribe of Indians  
Crow Agency Wastewater System Improvements Project  
RRG-10-1447**

The 2009 Legislature authorized a \$100,000 grant for phase 3a of wastewater system improvements at Crow Agency. The project consists of television inspection of existing lines and the replacement of laterals. The project is scheduled for construction in 2011. No grant funds have been disbursed.

**Cut Bank, City of**  
**Water System Improvements Project**  
**RRG-08-1360**

The 2007 Legislature authorized a \$100,000 grant for water distribution system improvements. The project will replace over 7,000 linear feet of old, heavily corroded cast iron water main and replace valves, fittings and fire hydrants for the renovated sections. The project will significantly improve fire flows to the downtown section of the city. The majority of the construction on this phase of the water system improvements project took place during 2009, with completion early in 2010.

**Daly Ditches Irrigation District**  
**Hedge Canal Diversion Replacement**  
**RRG-10-1390**

The 2009 Legislature authorized a \$100,000 grant for the replacement of the Hedge Canal Diversion, a 100-year old timber dam in the Bitterroot River. The district received matching funds from the USACE and completed the project early in 2010. DNRC has disbursed \$99,033.55 of the grant funds.

**Darby, Town of**  
**Water System Improvements Project**  
**RRG-08-1356**

The 2008 Legislature authorized a \$100,000 grant for improvements to the drinking water system. Due to funding limitations, the project was phased for construction. The project, consisting of a new storage reservoir, well, and distribution system improvements, is complete. DNRC has disbursed \$95,000 of the grant funds.

**Dawson County**  
**Yellowstone River Floodplain Management**  
**RRG-04-1221**

The 2003 Legislature authorized a \$75,000 grant to update floodplain regulations in Dawson County by adopting a new Flood Insurance Study. Work on a hydrological analysis, floodplain assessment, and floodplain delineation is complete. New flood hazard maps will be made covering 15 miles of the Yellowstone River in and around Glendive. A public participation and data adoption process will take place and the Flood Insurance Study and maps will be published and made available to the public. A second amendment which further extended the grant to December 31, 2011 was signed in December 2009. DNRC has disbursed \$70,000 of the grant funds.

**Dayton Lake County Water and Sewer District**  
**Wastewater System Improvements Project**  
**RRG-10-1430**

The 2009 Legislature authorized a \$100,000 grant for the design and construction of a new wastewater collection and treatment system. Preliminary administrative work has been completed but, due to funding limitations, the project has been delayed indefinitely. DNRC has disbursed \$6,257.38 of the grant funds.

**DNRC- Water Resources Division**  
**Nevada Creek Canal Design and Construction**  
**RRG-10-1453**

The 2009 Legislature authorized a \$100,000 grant to reconstruct drop structures in the North Canal which had been destroyed in 2000. No grant funds have been dispersed. The project is on schedule, and is expected to be completed by December 2011.

**Dutton, Town of**  
**Wastewater System Improvements**  
**RRG-10-1381**

The 2009 Legislature authorized a \$100,000 grant to design and construct a wastewater system improvements project. The project is expected to be complete by December of 2010. DNRC has disbursed \$90,000 of the grant funds.



**Elk Meadows County Water District  
Water System Improvements Project  
RRG-08-1334**

The 2007 Legislature authorized a \$100,000 grant for the construction of improvements to its drinking water system. The project has been completed in phases. Phase 1, consisting of a short distribution line replacement, was completed early in 2008. Phase 2, consisting of a storage tank expansion and the installation of water meters, was completed late in 2008. Phase 3, distribution system upgrades, was completed in 2010. The final phase, the drilling of an additional well, has been delayed pending water rights acquisition, and a firm construction date has not been established. DNRC has disbursed \$45,308.04 of the grant funds.

**Em-Kayan County Water and Sewer District  
Water System Improvements Project-Phase 1  
RRG-10-1411**

The 2009 Legislature authorized a \$100,000 grant for the replacement of portions of its water distribution system. The project is complete except for minor closeout issues. DNRC has disbursed \$15,000 of the grant funds.

**Ennis, Town of  
Water System Improvements  
RRG-10-1441**

The 2009 Legislature authorized a \$100,000 grant to design and construct a new water supply well. The project is expected to be complete in December 2011. No grant funds have been disbursed.

**Eureka, Town of  
Water System Improvements Project  
RRG-10-1457**

The 2009 Legislature authorized a \$100,000 grant for the design and construction of water system improvements, consisting primarily of distribution system replacement. The project is currently being designed with construction scheduled for 2011. No grant funds have been disbursed.

**Fairfield, Town of  
Wastewater System Improvements Project  
RRG-06-1255**

The 2005 Legislature authorized a \$100,000 grant for wastewater collection system improvements and a new lagoon. Funding limitations have delayed the lagoon work. However, the project has been phased and rehabilitation of a critical section of the collection system outfall line has been completed. DNRC has disbursed \$91,981.98 of the grant funds.

**Flathead Basin Commission  
Mapping the Impacts of Septic Systems: A Shallow Groundwater Study  
RRG-10-1464**

The 2009 Legislature authorized a \$100,000 grant for groundwater mapping to determine groundwater quality in the Flathead Basin. No grant funds have been requested or disbursed.

**Flathead County  
Bigfork Stormwater System Improvements  
RRG-10-1459**

The 2009 Legislature authorized a \$100,000 grant for storm water system improvements to the community of Bigfork. No grant funds have been requested or disbursed.

**Flathead County  
Flathead Regional Wastewater Management Group  
RRG-10-1440**

The 2009 Legislature authorized a \$100,000 grant for the Flathead Regional Wastewater Management Group to develop a basin wide plan which clearly identifies the existing sewage treatment resources and develops water quality protection in the Flathead Basin. DNRC has disbursed \$5,687.82 of the grant funds.

**Flathead Joint Board of Control  
FJBC Jocko K Canal Lining  
RRG-10-1416**

The 2009 Legislature authorized a \$100,000 grant for the Jocko K Canal Lining Project. The project will line irrigation canals to reduce seepage and increase available flows for bull trout and agriculture production. DNRC has disbursed \$47,865.18 of the grant funds.

**Fort Peck Tribes  
D-4 Drain Water Conservation Improvements  
RRG-08-1324**

The 2007 Legislature authorized a \$100,000 grant for the D-4 Drain project. The project includes construction of a riprap dam and holding reservoir that will allow the Fort Peck Tribes, Fort Peck WUA, and the Fort Peck Irrigation Project to realize a net water savings of up to 3,800 acre-feet of water per year. The contracted engineering firm has re-staked the location of the riprap dam and holding reservoir. The Fort Peck Water User's Association will begin construction on the dam as soon as the ground dries out. Due to the wet conditions, the Fort Peck Tribes anticipate applying for an extension. The second extension is due to expire December 1, 2010. No funds have been disbursed on this project.

**Fort Peck Tribes  
Lateral L-56 Rehab Project  
RRG-10-1409**

The 2009 Legislature authorized a \$100,000 grant for the rehabilitation and installation of a geomembrane lining in a one-mile section of canal. The physical project is complete and as-builts are in the final stage. DNRC has not yet received the closeout paper work. This contract with the Fort Peck Tribe expires December 31, 2010. DNRC has disbursed \$75,999.68 of the grant funds.

**Fort Shaw Irrigation District  
Water Qaulity and Quantity Improvements  
RRG-10-1421**

The 2009 Legislature authorized a \$100,000 grant for system improvements to the irrigation canals. The district has purchased the majority of the pipeline for the conversion and approximately 45% of the work is complete. The district will be submitting an amendment to change a portion of the scope of work. Project completion is expected by December 31, 2011. DNRC has disbursed \$57,552.20 of the grant funds.

**Gardner County Water and Sewer District  
Wastewater System Improvements Project  
RRG-10-1458**

The 2009 Legislature authorized a \$100,000 grant for wastewater system improvements, consisting primarily of the replacement of the existing lift station. The project is scheduled to bid late in 2010 and to be constructed in 2011. No grant funds have been disbursed.

**Geyser Judith Basin County Water and Sewer District  
Water System Improvements  
RRG-08-1311**

The 2007 Legislature authorized a \$100,000 grant to drill a second back-up well. The 2003 Legislature had previously authorized a grant for \$100,000 for the first well. The first project was delayed because water production from the first well is inadequate. The district worked with the Bureau of Reclamation and obtained funding to rehabilitate the well. The project is expected to be complete by December 2010. No grant funds have been disbursed.

**Gildford County Water and Sewer District  
Gildford Wastewater Systems Improvements  
RRG-10-1403**

The 2009 Legislature authorized a \$100,000 grant to construct new grinder stations, new service connections and pipes, new liner, gauges, and to remove sludge and construct a security fence. The project is expected to be completed by December 2010. No grant funds have been disbursed.

**Glacier Conservation District  
Marias River Water Quality Improvements Project  
RRG-08-1359**

The 2007 Legislature authorized a \$100,000 grant to fund planning, design, and construction of stream bank stabilization at two locations on the Marias River. The project is currently in the planning stages, with management being performed by the Liberty CD. No grant funds have been disbursed.

**Glasgow Irrigation District  
Vandalia Diversion Dam Rehab, Phase 3  
RRG-08-1303**

The 2007 Legislature authorized a \$100,000 grant for phase 3 of the rehabilitation of Vandalia Dam. The project includes repairing gates, replacing seals, and repairing corroded concrete on the surface of the dam. The district requested and DNRC approved a contract extension to December 31, 2010. DNRC has disbursed \$28,244.17 of the grant funds.

**Gore Hill County Water District  
Water System Improvements  
RRG-10-1437**

The 2009 Legislature authorized a \$100,000 grant for Gore Hill County Water District to install an arsenic and iron removal system at each of the two existing wells and design and construct two new water main segments to improve hydraulic efficiency of the distribution system. The project is expected to be completed in December 2010. DNRC has disbursed \$57,487 of the grant funds.

**Granite County  
Granite County Solid Waste Improvements  
RRG-10-1452**

The 2009 Legislature authorized a \$100,000 grant for improvements to the solid waste site in Phillipsburg and Drummond. The project will add improvements to the container sites, install a single-phase power and a platform scale, and purchase a computerized billing system. DNRC has disbursed \$58,413.42 of the grant funds.



**Green Mountain Conservation District  
Crow Creek Restoration Project 2007  
RRG- 08-1313**

The 2007 Legislature authorized a \$70,559 grant to restore approximately one-half mile of Crow Creek to a more proper functioning channel. The project experienced a flood event in spring 2009, with only minor damage experienced. Minor repairs were made, and monitoring is continual. Approximately \$3,000 in grant funds remain, which will support the weed control and re-vegetation efforts on the project. The current expected completion date is winter 2010.

**Greenacres County Water and Sewer District  
Water System Improvements Project  
RRG-10-1402**

The 2009 Legislature authorized a \$100,000 grant for water system improvements. The project includes a new well, pumphouse modifications, replacement of valves and other system accessories, and water meters. The project is scheduled to bid and constructed late in 2010. DNRC has disbursed \$44,802.57 of the grant funds.

**Greenfields Irrigation District  
Irrigation System Improvements Project  
RRG-08-1332**

The 2007 Legislature authorized a \$100,000 grant to construct pumping facilities designed to reduce sedimentation and to more efficiently utilize irrigation water. Irrigation waste water currently being lost to the system will be returned to main canals for reuse when the project is complete. The project is under construction with completion scheduled for late 2010. DNRC has disbursed \$86,022.86 of the grant funds.

**Hamilton, City of  
Wastewater Treatment Plant Improvements Project  
RRG-08-1343**

The 2007 Legislature authorized a \$100,000 grant for the construction of upgrades to the city wastewater treatment plant. The project is currently under construction with completion scheduled for fall 2010. DNRC has disbursed \$95,000 of the grant funds.

**Hardin, City of  
Wastewater System Improvements  
RRG-10-1412**

The 2009 Legislature authorized a \$100,000 grant for Hardin water system improvements. This project is part of a larger phased project. This phase of the project was scheduled for bid in fall 2010. Project completion is scheduled for December 2011. No grant funds have been disbursed.

**Hebgen Lake Estates Water and Sewer District  
Wastewater System Improvements  
RRG-09-1377**

The 2007 Legislature authorized a \$100,000 grant for wastewater system improvements. The district completed hydrogeologic studies and design for the system improvements. The project is scheduled for completion by December 2010.

**Hill County  
Beaver Creek Dam Stabilization Project  
RRG-08-1354**

The 2007 Legislature authorized a \$100,000 grant to Hill County for the construction of safety improvements to Beaver Creek Dam. The project consists primarily of structural modifications, including a toe berm to augment stability. The project is currently in design, with construction scheduled for late 2010. No grant funds have been disbursed.

**Homestead Acres County Water and Sewer District  
Water System Improvements  
RRG-10-1442**

The 2009 Legislature authorized a \$100,000 grant to Homestead Acres County WSD for water system improvements. The project includes the design and construction of two additional wells, the installation of a new tank, relocation of meters, and improvements to the distribution system. Project completion is expected by December 2011. DNRC has disbursed \$18,375 of the grant funds.

**Hysham Irrigation District  
Hysham Main Ditch Improvement  
RRG-08-1331**

The 2007 Legislature authorized a \$100,000 grant to Hysham Irrigation District. The project includes lining the canal and raising certain sections of the canal banks to improve conveyance efficiency. DNRC has disbursed \$56,113 of the grant funds. DNRC transferred the remaining \$43,887 in grant funds to Hysham Irrigation District project RRG-10-1435 to help with start up costs. Project completion will occur when the transferred grant funds have been expended. Project completion is expected by December 2011.

**Hysham Irrigation District  
Pump Station Electrical Improvements  
RRG-10-1435**

The 2009 Legislature authorized a \$100,000 grant for Hysham Irrigation District to install reduced voltage starters and a dynamic read flowmeter on the main pumping unit. Bids were advertised in September 2010. DNRC transferred \$43,887 from RRG-08-1331 to assist in start up for this project. Project completion is slated for December 2011. DNRC has disbursed \$2,214 of the grant funds.

**Jette Meadows County Water and Sewer District  
Water System Improvements Project  
RRG-10-1408**

The 2009 Legislature authorized a \$100,000 grant for the construction of water system improvements, including distribution system upgrades and a new storage reservoir. The project was constructed in 2010 and is complete except for closeout issues. DNRC has disbursed \$95,000 of the grant funds.

**Judith Gap, Town of  
Water and Wastewater System Improvements  
RRG-10-1407**

The 2009 Legislature authorized a \$100,000 grant for Judith Gap water and wastewater system improvements. Project completion is expected by December 2011. DNRC has disbursed \$50,000 of the grant funds.

**Kevin, Town of  
Water System Improvements  
RRG-10-1385**

The 2009 Legislature authorized a \$100,000 grant for Kevin water system improvements. The project was broken into two phases for funding reasons. Phase 1 is complete and phase 2 is in the design phase. Phase 1 improvements included water meters, distribution, and a new water tank. Phase 2 improvements will include rebuilding of three springs with pump houses, a new booster pump station, and new telemetry and treatment. Project completion is expected by December 2011. DNRC has disbursed \$76,000 of the grant funds.

**Lake County  
Lake County LiDAR Mapping Project  
RRG-10-1400**

The 2009 Legislature authorized a \$100,000 grant to Lake County to produce detailed maps of the Flathead region for hazard planning and natural resource development. LiDAR data were collected, processed and submitted. The project is expected to be completed in fall 2010.

**Laurel, City of**  
**Laurel Water System Improvements**  
**RRG-10-1398**

The 2009 Legislature authorized a \$100,000 to Laurel for upgrades to the existing water treatment facility which serves the 6,800 people community and one industry near Laurel. There is a high probability for a catastrophic failure at the water treatment plant. Failure would pose a public health risk and water shortages for the community. DNRC has disbursed \$90,000 of the grant funds.

**Lewistown, City of**  
**Lewistown Wastewater System Improvements**  
**RRG-11-1466**

The 2009 Legislature authorized a \$100,000 grant for Lewistown to upgrade the sewer pipe, fix leaking services, and add a new manhole. No grant funds have been dispersed.

**Libby, City of**  
**Cabinet Heights Wastewater System Improvements Project**  
**RRG-08-1305**

The 2005 Legislature authorized a \$100,000 grant to Libby for the construction of a wastewater collection system in the Cabinet Heights subdivision, a recently annexed area that currently relies upon on-site wastewater disposal. The project was delayed while Libby waited to receive federal funds. The project is now complete except for closeout issues. DNRC has disbursed \$95,000 of the grant funds.

**Livingston, City of**  
**Livingston Anaerobic Digester Improvements and Composting Facility**  
**RRG-10-1426**

The 2009 Legislature authorized a \$100,000 grant for process improvements to Livingston's wastewater treatment facilities. The project is under construction with completion scheduled for late 2010. No grant funds have been disbursed.

**Loma County Water and Sewer District**  
**Water System Improvements**  
**RRG-09-1367**

The 2009 Legislature authorized a \$100,000 grant for design and construction of improvements to the Loma County water distribution system and water storage tank. The grant agreement specified the use of grant funds for purchase of water meters. An amendment to the agreement was executed in December of 2009 which allowed for debt election and engineering expenses to be paid from these grant funds. The district has the remainder of its funding package in place, including a second RRGL grant from the Legislature in 2009. Construction began during summer 2010.

**Malta Irrigation District**  
**Installation of Water Measuring Devices and Structures, Headwalls and Check Structures**  
**RRG-09-1375**

The 2007 Legislature authorized a \$100,000 grant for Malta Irrigation District. However, that project was not possible. The 2009 Legislature authorized the district to proceed with a different project with similar resource benefits. The new project includes the construction and installation of check structures, headwalls and weirs and the installation of measuring devices. This project is approximately 35% complete. The district has until December 31, 2012 to complete this project. DNRC has disbursed \$36,503.21 of the grant funds.

**Manhattan, Town of**  
**Water System Improvements**  
**RRG-08-1364**

The 2007 Legislature authorized a \$100,000 grant for Manhattan. The project includes the installation of water meters, backflow prevention devices, a fence around the chlorination house, and backup power. The project will be completed by December 2010. DNRC has disbursed \$90,000 of the grant funds.



**Melstone, Town of**  
**Water System Improvements**  
**RRG-10-1439**

The 2009 Legislature authorized a \$100,000 grant for the construction of new wells and associated facilities to improve the drinking water supply. Contractor bid opening occurred in September 2010 and project completion is scheduled for December 2011. No grant funds have been disbursed.

**Milk River Irrigation Project Joint Board of Control**  
**Milk River System-wide Geolrrigation Mapping Project**  
**RRG-10-1422**

The 2009 Legislature authorized a \$65,004 grant for a geolrrigation mapping project. The project will provide district managers, staff, and irrigators with access to local, state and federal data regarding irrigation projects. The grant contract expires December 31, 2010. DNRC has disbursed \$37,550.20 of the grant funds.

**Missoula County-Lewis and Clark Subdivision**  
**Water System Improvements Project**  
**RRG-10-1389**

The 2009 Legislature authorized a \$100,000 grant for the design and construction of water system improvements for Lewis and Clark Subdivision, a small subdivision located in the community of Clinton. The project includes replacement of the undersized distribution system and the installation of water meters. The project is complete except for closeout issues. DNRC has disbursed \$37,882.32 of the grant funds.

**Montana Department of Environmental Quality**  
**Geothermal Assessment and Outreach Partnership**  
**RRG-08-1308**

The 2007 Legislature authorized a \$99,963 grant for DEQ to inventory and study selected geothermal sites in Montana for development potential as a source of renewable energy. Field work has been completed and the DEQ intends to submit a final report in fall 2010. The period of performance has been extended to December 31, 2010.

**Montana DNRC-Water Resources Division**  
**Martinsdale Reservoir Dam Drain Project**  
**RRG-10-1395**

The 2009 Legislature authorized a \$100,000 grant for the rehabilitation of the drain system associated with the Martinsdale Dam, thus preserving the water storage facility. No grant funds have been disbursed.

**Montana Department of Natural Resources and Conservation**  
**Ruby Dam Rehabilitation Project**  
**RRG-10-1396**

The 2009 Legislature authorized a \$100,000 grant for improvements to Ruby Dam, including spillway replacement. The project is under construction and scheduled for completion in December 2011. No grant funds have been disbursed.

**Montana DNRC-Water Resources Division**  
**Two-Dot Canal Rehabilitation Project**  
**RRG-10-1450**

The 2009 Legislature authorized a \$100,000 grant for the Two-Dot canal rehabilitation project. The project will make improvements to the irrigation canal including: grade, shape and line 1,200 lineal feet of canal. DNRC has disbursed \$81,889.85 of the grant funds.

**Montana State University-Montana Water Center  
Decisionmaker's Guide to Montana's Water  
RRG-10-1413**

The 2009 Legislature authorized a \$99,463 grant for Montana Water Center to produce educational material related to the management of Montana water resource. The purpose is to educate elected officials on issues that are water-related and often misinterpreted. Work is in progress. No grant funds have been disbursed.

**Montana Watercourse  
Watershed Education for Real Estate Agents  
RRG-10-1388**

The 2009 Legislature authorized a \$19,333 grant to develop online educational material pertaining to water rights and water management for real estate agents in Montana. Work is in progress. No grant funds have been disbursed.

**Neihart, Town of  
Water System Improvements Project  
RRG-08-1355**

The 2007 Legislature authorized a \$100,000 grant to replace the Neihart drinking water main between the treatment plant and the distribution system. The project is complete except for closeout issues. DNRC has disbursed \$95,000 of the grant funds.

**Nashua, Town of  
Water System Improvements Project  
RRG-10-1433**

The 2009 Legislature authorized a \$100,000 grant for general water system improvements in Nashua. These improvements include installation of water meters on all service connections and the replacement of 3,345 feet of deteriorated water main and its associated service connections. Close out is expected by October 31, 2010. The contract expires December 31, 2010. DNRC has disbursed \$91,366.70 of the grant funds.

**North Baker Water and Sewer District  
Wastewater System Improvements  
RRG-10-1438**

The 2009 Legislature authorized a \$100,000 grant for wastewater system improvements. The project includes replacement of individual septic and drain field sewer systems with a centralized collection system that will connect to the Town of Baker system. A contractor has been selected and the project is proceeding. Project completion is scheduled for December 2010. No grant funds have been disbursed.

**North Powell Conservation District  
Blackfoot Drought and Water Conservation Project  
RRG-08-1325**

The 2007 Legislature authorized a \$100,000 grant for North Powell CD to increase water conservation through the improved performance of pivot systems. The district and the Blackfoot Challenge have completed irrigation pivot system energy and maintenance evaluations on 37 pivot systems. Energy audits were completed on a number of systems. The project is scheduled to be completed by November 2010.

**Park County-Cooke City Water District  
Water System Improvements  
RRG-04-1191**

The 2003 Legislature authorized a \$100,000 grant for a water system improvements project for the community of Cooke City. The project will be complete by December 2010. DNRC has disbursed \$90,000 of the grant funds.

**Philipsburg, Town of  
Wastewater System Improvements Project  
RRG-10-1397**

The 2009 Legislature authorized a \$100,000 grant to be applied toward the design and construction of a wastewater treatment facility to replace its existing lagoon system. Preliminary issues, including the acquisition of adequate funding and land acquisition, have delayed the project. No grant funds have been disbursed.

**Philipsburg, Town of  
Water Meter Installation Project  
RRG-08-1342**

The 2007 Legislature authorized a \$100,000 grant for the installation of water meters at all drinking water system connections. The purpose of the project is to promote conservation and impacts to the Phillipsburg wastewater system. The project is complete except for closeout issues. DNRC has disbursed \$95,000 of the grant funds.

**Pinesdale, Town of  
Water System Improvements Project  
RRG-08-1333**

The 2007 Legislature authorized a \$100,000 grant for Pinesdale water system improvements. The project includes construction of a new storage reservoir and the replacement of a portion of the distribution system. The project is complete except for closeout issues. DNRC has disbursed \$95,000 of the grant funds.

**Polson, City of  
Water System Improvements  
RRG-09-1368**

The 2009 Legislature authorized a \$100,000 grant for water system improvements. The project includes the design and construction of new tanks including controls, valves, fittings, telemetry system, and site fencing. Project completion is expected in December 2010. DNRC has disbursed \$95,000 of the grant funds.

**Pondera County Conservation District  
Marias River Watershed Baseline Assessment  
RRG-08-1347**

The 2007 Legislature authorized a \$100,000 grant to complete a baseline assessment of the Marias River watershed. The project includes locating and establishing water quality monitoring sites; collecting samples quarterly; training local conservation districts in water quality monitoring and sampling procedures; creating a database; data entry; and preparing a written assessment of watershed baseline conditions for use in prioritizing restoration projects. The project was contracted in spring 2008 and is expected to be completed in December 2010.

**Power Teton County Water and Sewer District  
Water System Improvements  
RRG-08-1362**

The 2007 Legislature authorized a \$100,000 grant for phase 3 of a water systems improvement project. The project includes distribution system improvements and charcoal filtration at the water treatment plant. This project will be complete by December 2010. DNRC has disbursed \$91,500 of the grant funds.



**Rae Water and Sewer District  
Water System Improvements  
RRG-08-1316**

The 2007 Legislature authorized a \$100,000 grant for water system improvements. The project includes the design and construction of a new tank; distribution improvements; a new booster pump station and backup generator; and, an upgrade to the supervisory control and data acquisition system. The project has been bid and is expected to be complete by December 2010. DNRC has disbursed \$90,000 of the grant funds.

**Ravalli County  
Ravalli County Phase 2 LiDAR Mapping  
RRG-10-1384**

The 2009 Legislature authorized a \$100,000 grant to map key areas of the Bitterroot Valley using LiDAR technology to acquire floodplain data. The project is expected to be completed by December 2010. DNRC has disbursed \$85,498 of grant funds.

**Ravalli County Environmental Health  
Bitterroot Valley Septic Systems Impact Evaluation Model  
RRG-10-1383**

The 2009 Legislature authorized a \$100,000 grant for preparing a septic systems environmental impact model for Ravalli County. DNRC has disbursed \$3,641.25 of the grant funds.

**Richland County Conservation District,  
Lower Yellowstone Groundwater Reservation  
RRG-10-1393**

The 2009 Legislature authorized a \$100,000 grant for a groundwater study to identify water for potential development. Project completion is scheduled for September 2011. DNRC has disbursed \$21,188 of the grant funds.

**Ronan, City of  
Wastewater System Improvements  
RRG-08-1298**

The 2007 Legislature authorized a \$100,000 grant for a wastewater system improvement project. The project includes installation of backup power for the lift stations. Problems with the housing of the lift station occurred before final closeout. Responsibility for the costs for repairs is being resolved among the contractor, the engineer, and the city. DNRC has disbursed \$94,600 of the grant funds.

**Ronan, City of  
Ronan Water System Improvements  
RRG-10-1462**

The 2009 Legislature authorized a \$100,000 to construct a new water storage tank, a new booster station, a new well, and a new treatment plant. The project is scheduled for completion by December 2012. No grant funds have been disbursed.

**Savage Irrigation District  
Rehabilitation Plan  
RRG-06-1283**

The 2001 Legislature authorized a \$100,000 grant to investigate options and produce a design plan for rehabilitating system features. The project is approximately 5% completed. The project was extended in 2008 and is expected to be completed by December 2010. DNRC has disbursed \$3,891 of the grant funds.

**Sanders County  
Septic Systems Replacement Project  
RRG-08-1317**

The 2007 Legislature authorized a \$100,000 grant for Sanders County. The county used grant funds to establish and maintain a small revolving loan program through the Sanders County Community Development Corporation. The revolving loan program provides for alternative funding for Sanders County residents to replace sub-standard and/or failing on-site wastewater treatment systems. Loan funds are only made available after the applicants have exhausted or otherwise been excluded from other conventional means of funding necessary improvements. The grant agreement will expire in September 2012. Sanders County is searching for other grants from other sources to be able to continue the program. DNRC has disbursed \$90,000 of the grant funds.

**Seeley Lake Sewer District  
Centralized Wastewater Collection and Treatment System Phase 1  
RRG-07-1289**

The 2005 Legislature authorized a \$100,000 grant for the development and construction of phase 1 of a multi-phased wastewater collection and treatment system for the community of Seeley Lake. The acquisition of federal grants has delayed progress. However, preliminary engineering of the project is proceeding, and alternatives are being evaluated to facilitate phase 1 construction. DNRC has disbursed \$49,950 of the grant funds.

**Seeley Lake Water District  
Water System Improvements Project  
RRG-08-1344**

The 2007 Legislature authorized a \$100,000 grant for the design and construction of water system improvements including additional storage. The project is currently under construction, with completion scheduled for late 2010. DNRC has disbursed \$95,000 of the grant funds.

**Sheaver's Creek Water and Sewer District  
Water System Improvements Project  
RRG-04-1212**

The 2003 Legislature authorized a \$100,000 grant to Sheaver's Creek WSD for design and construction of improvements to its drinking water system. The project included distribution line replacement, water meter installations at all service connections, two new wells, and construction of a 140,000-gallon water storage reservoir. Distribution system work and wells were completed in 2005. Easement acquisition delayed the construction of the storage reservoir, which is now complete. DNRC has disbursed \$90,000 of the grant funds.

**Shelby, City of  
Wastewater System Improvements  
RRG-10-1436**

The 2009 Legislature authorized a \$100,000 grant for a wastewater system improvements project, including distribution system improvements and rehabilitation of nine manholes. The project is expected to be complete by December 2010. DNRC has disbursed \$90,000 of the grant funds.

**Sheridan, Town of  
Water System Improvements Project  
RRG-06-1259**

The 2005 Legislature authorized a \$100,000 grant for water distribution system improvements, including the replacement of water mains, hydrants, and appurtenances. The project is complete except for a small segment scheduled for construction in fall 2010. DNRC has disbursed \$90,000 of the grant funds.

**Sheridan, Town of**  
**Wastewater System Improvements Project**  
**RRG-08-1345**

The 2007 Legislature authorized a \$100,000 grant for the construction of wastewater collection and treatment system upgrades. The project will be implemented in phases. The phase 1 collection system improvements are under construction, with completion scheduled for fall 2010. DNRC has disbursed \$69,764.28 of the grant funds.

**Sidney Water Users Irrigation District**  
**Increasing Irrigation Efficiency Phase 2**  
**RRG-08-1351**

The 2007 Legislature authorized a \$100,000 grant to replace a portion of main canal with pipeline. Project completion is expected by December 2010. No grant funds have been disbursed.

**South Chester County Water District**  
**Water System Improvements**  
**RRG-10-1461**

The 2009 Legislature authorized a \$100,000 grant for the purchase and installation of water meters for all the users in the district. The project also includes leak detection and the repair or replacement of small diameter water lines where necessary.

**St. Ignatius, Town of**  
**St. Ignatius Water System Improvements**  
**RRG-10-1434**

The 2009 Legislature authorized a \$100,000 grant to add an additional well, replace distribution lines, install a water main, and conduct a leak detection survey. The project is expected to be completed by December 2010. DNRC has disbursed \$3,500 of grant funds.

**Stevensville, Town of**  
**Stevensville Wastewater Improvements Project**  
**RRG-10-1428**

The 2009 Legislature authorized a \$100,000 grant to construct an ultraviolet disinfection system, conduct a groundwater study, and construct emergency power facilities. The project is expected to be completed by December 2011. No grant funds have been disbursed.

**Stevensville, Town of**  
**Stevensville Water System Improvements**  
**RRG-10-1455**

The 2009 Legislature authorized a \$100,000 grant for water system improvements. The project includes installing water meters, consolidating a well field, and making improvements to the distribution system. No grant funds have been disbursed.

**Stillwater Conservation District**  
**Stillwater-Rosebud Watershed Aquifer & Stream Study**  
**RRG-08-1330**

The 2007 Legislature authorized a \$100,000 grant to collect and evaluate hydrogeologic data to assist in planning and managing development occurring in the Stillwater-Rosebud watershed. Data are being collected and analyzed. Information on the groundwater and surface water characteristics and interactions will be made available to residents, planners, and resource managers. The goal is to use the data to better manage and protect groundwater resources throughout the watershed. Project completion is expected by December 2010.



**Stillwater County  
Yellowstone River Floodplain Management  
RRG-04-1222**

The 2003 Legislature authorized a \$75,000 grant to update floodplain regulations in Stillwater County by adopting a Flood Insurance Study in the project area. Work on a hydrological analysis, floodplain assessment, and floodplain delineation is complete. New flood hazard maps will be made covering 15 miles of the Yellowstone River in and around Reed Point, Columbus, and Park City. An amendment extending the grant term to December 2009 was signed in late December 2007. A second amendment which further extended the grant to December 31, 2011 was signed in December 2009. DNRC has disbursed \$70,000 of the grant funds.

**Sunburst, Town of  
Water System Improvements Project  
RRG-08-1357**

The 2007 Legislature authorized a \$100,000 grant to identify the source of corrosive water that has destroyed the casing on one of the town supply wells and to develop two existing wells that are not currently in use. A hydrogeologic investigation was performed by the Montana Bureau of Mines and Geology, and actual source water improvements are currently being designed for construction in 2011. DNRC has disbursed \$6,783.07 of the grant funds.

**Sunset Irrigation District  
Irrigation System Improvements Project  
RRG-09-1374**

The 2007 Legislature authorized a \$100,000 grant to convert open ditches to pipelines, thus providing a pressurized irrigation system to reduce or alleviate pumping costs for spray irrigation. The project has been reduced in scope and will be completed in 2011 pending the acquisition of match funding. No grant funds have been disbursed.

**Superior, Town of  
Water System Improvements  
RRG-08-1309**

The 2007 Legislature authorized a \$100,000 grant for water system improvements. The improvements are all to the distribution system. The project will be complete by December 2010. DNRC has disbursed \$90,000 of the grant funds.

**Sweetgrass County  
Yellowstone Greycliff Study  
RRG-10-1405**

The 2009 Legislature authorized an \$80,000 grant for completion of a preliminary engineering report to address a severe bank erosion problem. The project is to be completed in December 2010. DNRC has disbursed \$44,763 of the grant funds.

**Sweet Grass County Water and Sewer District  
Water System Improvements  
RRG-10-1445**

The 2009 Legislature authorized a \$100,000 grant for construction of a new 195,000-gallon capacity water storage tank; a new transmission main connecting the new tank to the system; a new booster pump station; new PVC piping to loop existing dead-end water supply mains; and for other repairs or upgrades to the distribution system.

**Troy, City of  
Water System Improvements Project-Phase 2  
RRG-10-1404**

The 2009 Legislature authorized a \$100,000 grant for phase 2 water system improvements. The project is complete except for closeout. DNRC has disbursed \$50,798.96 of the grant funds.

**Twin Bridges, Town of  
Twin Bridges Wastewater System Improvements  
RRG-08-1365**

The 2007 Legislature authorized a \$100,000 grant to construct a lagoon and irrigation system, replace sewer mains, install service meters, and upgrade lift stations. The project is scheduled for completion by December 2010. No grant funds have been disbursed.

**Upper and Lower River Road County Water and Sewer District  
Water and Wastewater System Improvements Project-Phase 3  
RRG-10-1399**

The 2009 Legislature authorized a \$100,000 grant for phase 3 of a sewer and water systems improvements project. Phase 3 is complete except for closeout issues. DNRC has disbursed \$67,734.99 of the grant funds.

**Valier, Town of  
Water System Improvements  
RRG-10-1418**

The 2009 Legislature authorized a \$100,000 grant for water system improvements. The project includes the design and construction of a new water tank, distribution system improvements, and installation of water meters. The project is currently under construction and scheduled for completion by spring of 2011. DNRC has disbursed \$95,000 of the grant funds.

**Whitefish, City of  
Whitefish Wastewater System Improvements  
RRG-10-1451**

The 2009 Legislature authorized a \$100,000 grant for improvements to repair/replace the sanitary sewer main and 44 manholes and install an ultra-violet disinfection facility. No grant funds have been disbursed.

**Whitehall, Town of  
Wastewater System Improvements  
RRG-08-1366**

The 2007 Legislature authorized a \$100,000 grant for wastewater system improvements. The project includes design and construction of a two-cell, membrane-lined, facultative lagoon system; a 28 million gallon storage cell and spray-irrigation system; elimination of four storm drain connections to the sanitary sewer system; reconnection to the existing storm sewer system; and, rehabilitation of the collection system. The project was extended to December 2010, and another extension is likely. Design work is 85% complete. No grant funds have been disbursed.

**Wibaux, Town of  
Wastewater System Improvements  
RRG-10-1406**

The 2009 Legislature authorized a \$100,000 grant to construct a new aerated sewage lagoon and evaporation cell, install piping, and remove sludge from the existing cells. The project is awaiting additional funding from the State Revolving Fund. Thus, work has not yet begun. Project completion is scheduled for December 2011. No grant funds have been disbursed.

**Winifred, Town of  
Wastewater System Improvements  
RRG-10-1382**

The 2009 Legislature authorized a \$100,000 grant for wastewater system improvements, including sewer main replacement and rehabilitation of sewer manholes. The project will be complete by December 2010. DNRC has disbursed \$70,000 of the grant funds.

**Wolf Creek, Town of  
Wastewater System Improvements  
RRG-10-1417**

The 2009 Legislature authorized a \$100,000 grant for wastewater system improvements, including construction of a new gravity sewer collection system, a new lift station, and a new treatment plant. The project will be complete by December 2011. DNRC has disbursed \$65,000 of the grant funds.

**Woods Bay Homesites County Water and Sewer District  
Water System Improvements Project  
RRG-07-1285**

The 2005 Legislature authorized a \$100,000 grant for water distribution system improvements including line replacement and the installation of water meters. Easement acquisition delayed the project, which is now complete except for closeout issues. DNRC has disbursed \$50,000 of the grant funds.

**Yellowstone Conservation District  
Modeling Aquifer Response to Urban Sprawl, West-Billings Area, MT  
RRG-08-1340**

The 2007 Legislature authorized a \$100,000 grant for building and calibrating a finite difference groundwater model under steady-state and transient (time variable) conditions to match measured groundwater levels and measured stream flows. Once completed, the model will be used to test aquifer responses under various development scenarios in the West Billings area. Work is continuing on the project. Completion is scheduled for November 2010. .

**Yellowstone County  
Yellowstone River Floodplain Management  
RRG-04-1223**

The 2003 Legislature authorized a \$75,000 grant to update comprehensive floodplain regulations in Yellowstone County by adopting a new Flood Insurance Study. A hydrologic analysis, floodplain assessment, floodplain delineation, and new flood hazard maps will be made from west county line to Pompey's Pillar, a distance of 45 river miles. With the exception of adopting and publishing the new maps, the project was substantially complete by December 2007. An amendment, extending the term of the grant to December 2009 was signed in late December 2007. A second amendment which further extended the grant to December 31, 2011 was signed in December 2009. DNRC has disbursed \$70,000 of the grant funds.

**Yellowstone County  
West Billings Flood Control and Groundwater Recharge Study  
RRG-10-1431**

The 2009 Legislature authorized a \$100,000 grant to complete a feasibility study that will evaluate design alternatives for flood control and groundwater recharge in the west Billings area. The study is underway completion is scheduled for September 2011. DNRC has disbursed \$12,133 of the grant funds.

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**Authorized Projects Not Yet Executed**

**Harlowton, City of  
Harlowton Water System Improvements  
No Contract**

The 2009 Legislature authorized a \$100,000 grant for improvements to the Harlowtown water system including a new storage tank and booster pumps. The city is currently working with DNRC as well as other funding agencies and should have a contract by December 2010.



**Hysham Irrigation District**  
**SDSS Flow Monitoring / Data Transfer**  
**No Contract**

The 2009 Legislature authorized a \$100,000 grant to the Hysham Irrigation District to install dynamic flowmeters at numerous sites throughout the system that will be read from mobile receivers. The project is part of a phased system improvement plan. Contract execution is expected in the fall of 2010.

**Sunset Irrigation District**  
**Irrigation System Improvements Project**  
**No Contract**

The 2007 Legislature authorized a \$100,000 grant to Sunset Irrigation District to convert open ditches to pipelines, thus providing a pressurized irrigation system to reduce or alleviate pumping costs for spray irrigation. The cost of the system is high, and the district has not committed to borrowing the additional funds necessary to construct the project. To date, the grant agreement has not been executed.

**Fort Smith Water and Sewer District**  
**Water System Improvements**  
**No Contract**

The 2009 Legislature authorized a \$100,000 grant to the Fort Smith WSD for water system improvements. This project is ready to be contracted, pending the notification and approval of the final funding package and budget. It is expected to be contracted by December 31, 2010.

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**Terminated Projects**

**Chester Irrigation District**  
**Chester Irrigation Project: Phase 2 Water Service Contract Application**  
**No Contract**

The 2007 Legislature authorized a \$100,000 grant to the Chester Irrigation District. The purpose of the grant is to provide funding to the Chester Irrigation District so it can begin negotiations with the USBR to obtain a water service contract for the Chester Irrigation Project. The Chester Irrigation Project is in the process of forming an irrigation district. The project will not be contracted until the irrigation district has been legally formed.

**Greater Woods Bay County Sewer District**  
**Greater Woods Bay Area Wastewater System Improvements**  
**No Contract**

The 2009 Legislature authorized a \$100,000 grant to the Greater Woods Bay County Sewer District for the design and construction of a regional wastewater collection system to convey sewage from the Woods Bay and Sheaver's Creek areas to Bigfork for treatment. The project is still in its preliminary stages and progressing slowly. No grant agreement has been executed.

**Mineral County Saltese Water and Sewer District**  
**Saltese Wastewater System Improvements**  
**No Contract**

The 2007 Legislature authorized a \$100,000 grant to the community of Saltese for wastewater system improvements. The project specifically was to construct a new gravity collection system, lift station, septic tank, and drainfield. The project has not yet been contracted because communication between the sponsor and DNRC cannot be established. The engineer contracted by the community for the project is no longer involved with the project. The water and sewer district has not responded to several phone calls and emails from DNRC.

**Sheaver's Creek County Water and Sewer District**  
**Sheaver's Creek Wastewater Collection System-Phase 1b**  
**No Contract**

The 2009 Legislature authorized a \$100,000 grant to Sheaver's Creek County WSD for the design and construction of a regional wastewater collection system to convey sewage from the Woods Bay and Sheaver's Creek areas to Bigfork for treatment. The project is still in its preliminary stages and progressing slowly. No grant agreement has been executed.

**Whitefish Flathead County Water and Sewer District**  
**Investigation of Septic Leachate to Littoral Areas of Whitefish Lake**  
**No Contract**

The 2009 Legislature authorized a \$70,000 grant to Whitefish Flathead County Water and Sewer District to study the effects of septic leachate to littoral (shore zone) areas of Whitefish Lake. Administrative problems have delayed progress and no grant agreement has been executed.

**Woods Bay Homesites County Water and Sewer District**  
**Woods Bay Homesites Wastewater Collection System-Phase 1c**  
**No Contract**

The 2009 Legislature authorized a \$100,000 grant to Woods Bay Homesites County WSD for the design and construction of a regional wastewater collection system to convey sewage from the Woods Bay and Sheaver's Creek areas to Bigfork for treatment. The project is still in its preliminary stages and progressing slowly. No grant agreement has been executed.

## **CHAPTER VIII**

### **Renewable Resource Project Planning Grants**

#### **Application Administration and Project Review Procedures**

The Renewable Resource Project Planning Grant program provides funds to planning efforts for projects that will measurably conserve, develop, manage, or protect Montana renewable resources. The 2009 Legislature authorized \$800,000 for project planning grants.

The 2009 Legislature also added the following authorization language: "Any remaining project funds may be used for any renewable resource program projects authorized under this section or for reclamation and development program projects authorized by the Sixty-first Legislature in HB 7." As a result of this language, the RRGL program received an additional \$175,000 and a total authorization of \$975,000 for planning grants during the 2011 biennium.

DNRC accepts applications for planning grants from public entities on an "open-cycle" basis. Grants for qualified studies are awarded on a first-come, first-serve basis until funding is expended. No application fee is required. No match funding was required for the 2011 biennium.

#### **Project Solicitation**

DNRC does not conduct a formal solicitation for applications. DNRC has informed engineering firms and other consultants likely to be involved with eligible studies that planning grants are available. DNRC also discusses the availability of planning grants during presentations to solicit applications for other public grant and loan programs. Project sponsors submit an application that describes the project, identifies the sources and uses of funding, and discusses the implementation schedule for the study.

DNRC awarded 69 grants to public entities for planning projects during the 2011 biennium. The entire \$975,000 authorization was contracted between July 1, 2009 and October 2009. There is currently a waiting list for planning grants. This popular program funded planning for 39 of the larger RRGL grant applications received in 2010.

#### **Application Review**

Planning grants must be used to plan projects that will enhance renewable resources through conservation, development, management, or preservation; for assessing feasibility or technical planning; or, for similar purposes approved by the legislature. DNRC evaluates all applications for completeness and compliance with program purposes.

DNRC staff review requests for planning grant funds. The scope of the project being considered is evaluated to determine its eligibility for funding under the RRGL Program. The proposed budget is analyzed to assure that the proposed costs are feasible.

#### **Project Management**

DNRC staff work closely with project sponsors and consultants during the planning stages of projects. For public facility studies, the applicant must contract with a registered professional engineer to prepare a preliminary engineering report that satisfies the requirements of the Uniform Application Supplement for Montana Public Facility projects. All state agencies that fund water, wastewater, and solid waste projects in Montana use the uniform application. The Montana Rural Development Rural Utilities Service, formerly known as Farmers Home Administration, also uses the uniform application.



For all projects, sponsors submit draft planning documents prepared under this program are submitted to DNRC or other agency professionals for review prior to interim payments. DNRC reviews and approves the final report prior to disbursing the final payment.

### Authorized Projects

During the 2011 biennium, DNRC awarded project planning grants for the following projects (Figure 10):

**FIGURE 10 Project Planning Grants Approved During the 2011 Biennium**

Project Sponsor	Project Type	Grant Amount
Amsterdam-Churchill Sewer District	Wastewater	\$ 20,000
Beaverhead Conservation District	Watershed	15,000
Beaverhead Conservation District	Fisheries	20,000
Big Timber, City of	Wastewater	10,000
Bigfork WSD	Water	15,000
Bitterroot Irrigation District	Irrigation	20,000
Black Eagle	Storm Sewer	15,000
Boulder, Town of	Wastewater	15,000
Brady, City of	Water	15,000
Broadview, Town of	Water	10,000
Brockton, Town of	Wastewater	15,000
Buffalo Rapids	Irrigation	15,000
Carbon Conservation District	Water Quality	25,000
Cascade Conservation District	Water Quality	20,000
Choteau, City of	Zoning Ordinance	5,000
Kalispell, City of	Pond Study/PER	20,000
Clinton Irrigation District	Irrigation	15,000
Daly Ditches Irrigation District	Irrigation	20,000
DNRC Conservation District Bureau	Planning Assistance CDs	15,000
East Bench Irrigation District	Irrigation	20,000
Fergus Conservation District	Watershed	20,000
Fergus County	Wastewater	15,000
Fort Belknap Tribe	Irrigation	10,000
Fort Peck Tribe	Irrigation	10,000
Fort Shaw Irrigation District	Irrigation	5,000
Gallatin Conservation District	Watershed	10,000
Gallatin Gateway WSD	Wastewater	20,000
Glendive, City of	Wastewater	20,000
Granite County	Growth Policy and CIP	10,000
Green Mountain Conservation District	Watershed	10,000
Hardin, City of	Water	7,500
Helena Valley Irrigation District	Irrigation	15,000
Hill County Conservation District	Weeds	15,000
Jefferson County – Montana City	Wastewater	10,000
Jefferson County – Clancy	Wastewater	15,000
Laurel, City of	Solid Waste	20,000
Lewis and Clark County	Soils Investigation	10,000
Lewis and Clark County – East Helena	Water	20,000
Liberty County Conservation District	Watershed	10,000
Livingston, City of	Growth Policy	5,000
Lockwood Irrigation District	Irrigation	15,000
Lower Musselshell	Organization	10,000

Lower Musselshell Conservation District	Irrigation	20,000
Madison County Conservation District	Watershed	15,000
Melrose Sewer District	Wastewater	10,000
Missoula County Wye Regional System	Water	20,000
Park Conservation District	Irrigation	20,000
Park Conservation District	Grant Writing	5,000
Philipsburg, Town of	Water	15,000
Plains, Town of	Water and Wastewater	10,000
Polson, City of	Water and Wastewater	15,000
Pondera County Conservation District	Irrigation	20,000
Pondera County Conservation District	Watershed	15,000
Red Lodge, City of	Zoning Ordinance	5,000
Richland Conservation District	Streambank	20,000
Roberts Carbon County WSD	Water and Wastewater	20,000
Ronan, City of	Stormwater/Lagoon Alternative	10,000
Sidney Water Users Irrigation District	Irrigation	15,000
Stevensville, Town of	Capital Improvement Plan	5,000
Stillwater County – Rapelje	Water	10,000
Sun Prairie Village	Water	20,000
Sweet Grass Conservation District	Watershed	20,000
Sweet Grass Conservation District	Streambank Restoration	20,000
Teton County Conservation District	Dam	25,000
Townsend, City of	Growth Policy	5,000
Vaughn, City of	Wastewater	20,000
West Great Falls Flood Control and Drainage District	Flood Control	15,000
White Sulphur Springs, City of	Water	10,000
<b>TOTAL</b>		<b>\$ 1,392,500</b>

**Note:** Total authorized amount for planning grants was \$975,000. As HB 6 permits, remaining project funds from other renewable resource projects were used to fund additional planning grants. The total \$1,392,500 awarded for planning projects reflects both the authorized amount and the use of remaining project funds on renewable resource planning projects.







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**2011**

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**Montana Department of Natural Resources and Conservation**



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